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The Irish Builder

A JOURNAL DEVOTED TO

ARCHITECTURE, * ARCHÆOLOGY, * ENGINEERING, * SANITATION,

ARTS AND HANDICRAFTS.

[1st & 15th of the Month.]

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CONTENTS.

Supplement.—Illustrations—Nurses' Home, Curragh; The "Billy Byrne" '98 Memorial, Wicklow; Irish Country Police Barracks.

	PAGE		PAGE
Notices	581	Law Cases	588
Comments	581-2	Old Belfast	589
The Architectural Association of Ireland	583	High-Class Joinery and Cabinet Works in Dublin	589
Obituary	583	Journal of the Royal Institute of British Architects	590
Our Illustrations	584	Correspondence	591
Building News	585	Brevities	592-3
Engineering News	586	Appointments, Contracts, and Tenders	vii.

NOTICES.

The *Irish Builder* is published twice a Month, on the 1st and 15th, and may be ordered from any Newsagent, or direct from the Offices,—11 Lower Sackville Street, Dublin.

BELFAST OFFICE:—10 Garfield Street, Belfast.

CORK OFFICE:—News Bros., Marlborough Street, Cork.

We have also established a London Office at 15 Montague Place, Russell Square, W.C., and all English, Scotch, and Welsh inquiries concerning copies of the paper and advertisements should be addressed there.

It is the only technical journal in Ireland, and reaches Architects, Engineers, County Surveyors, Builders, Contractors, Artisans, Council Officials, Members of Trades Associations, and Public Libraries throughout the country. A specimen copy will be sent post free to any address on application.

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Editorial.

Literary matter and drawings to be addressed to the *Editor*, and must be accompanied by the name and address of the sender, not necessarily for publication, but as a guarantee of good faith. We do not hold ourselves responsible for the opinions of correspondents.

Notes of works (especially contemplated works), contracts, reports, &c., are always welcome. Drawings and photographs are particularly acceptable.

Publishing.

All business communications to be addressed to the *Manager*. Advertisements must reach the office two days before the date of publication. The charge for Contracts, Notices, Prospectuses, Competitions, &c., is 6d. per line. Other advertisement rates can be had on application.

Payments.

Cheques and Postal Orders to be made payable to The Proprietor, *Irish Builder*.

Notice.—On and after this date all communications should be addressed to the new offices of the *IRISH BUILDER*, 11 Lower Sackville-street, Dublin.

COMMENTS.

The New Year.

As will appear on reference to our advertising columns, the proprietors have decided to reduce the price of the *Irish Builder* from three pence to one penny per copy, beginning with this current issue.

During the past year or so we have from time to time promised our readers various improved features in the paper, and we take on us to say that our promises have in the main been redeemed. We have spared no effort to bring the paper up to the level of high-class modern professional journalism, and that our efforts to maintain and strengthen our position as an organ and exponent of technical advancement in Ireland have not been altogether in vain, is testified by the many kindly appreciative letters which we have received from all quarters.

In initiating this reduction in the price of the paper it is not our intention to abate in the smallest degree the ideal we have set before us, and so far from reducing the scope of the paper it is our confident hope and intention to make this reduction in price but the forerunner of many other improvements as speedily as may be. We have to thank our readers for their continued and valued support, and to assure them we shall do our best to deserve it in an increased measure. We venture to express the hope that they will bring the paper under the notice of such of their friends as are not already subscribers.

During the year past we have in our columns dealt with many matters of interest and importance in the building trades and the allied professions.

The year just completed has not been a particularly eventful one in regard to building matters in Ireland; few large or important contracts have been entered on, and generally speaking the close of the year finds the building trade decidedly quiet. The inception of a great war in South Africa in the latter end of the year before last, and its continuance into the New Year has not been without an effect upon trade. Prices ruled high for all building materials throughout 1900, and rightly or wrongly to the war is attributed the cause; naturally freight and the cost of trans-

port of materials have exercised a large influence. But at the present moment prices shew some tendency to fall, and we may safely say that taking the iron market as a criterion or barometer of trade, a further fall may be looked for. The iron market constitutes so great a factor of England's industrial life that we cannot doubt we are warranted in advising our readers to watch it closely for signs and shadows of coming events. But if trade generally shews the record of an uneventful year in Ireland indications are not wanting to shew that in passing through a quiet revolution in Local Government we are on the threshold of an era of technical and industrial revivals. The establishment of a Board of Agriculture and Technical Education must exercise a great influence. Already in every direction there are indications of an awakening to the vast importance of technical instruction. England to-day stands in danger of losing that great commercial supremacy of hers, consequent upon her neglect of this subject. The technical and commercial superiority in the methods of the foreigner have played havoc with her monopolist markets, and although Ireland has few great monopolies to lose, even she must conform to the keener competition of the present times. The new Local Councils have shewn a praiseworthy desire to effect improvements in the education and housing of the working classes, and here in Dublin we have more than one great scheme in hands. The only regrettable feature is, and one to which we have constantly felt impelled to refer, is the short-sighted policy generally adopted in regard to the remuneration of officials, and particularly officials of professional training. Such a system can neither conduce to whole-hearted and enthusiastic service or even to common efficiency and incidentally real economy. But as experience of Government is gained by the newly fledged Local Authorities, we may look forward to a broader and more enlightened policy.

During the past year we have endeavoured to keep our readers fully informed of such things as pertained to their interests, and have never scrupled to freely speak our mind as occasion arose. Assured of their continued support we shall strive to be of greater utility to them in the future.

Clerk and Engineer to the South Dublin Union.

In our last issue we published a letter from Mr. R. M. Butler which had appeared in the *Irish Times* on the subject of the proposed appointment of a Clerk of the Union "who should be a C.E. capable of drawing plans," as it was doubtfully, haltingly put. Since then we regret to note that the Local Government Board have given their sanction to the terms of the proposed appointment, and the vacancy has now been duly advertised. Apart from the injury to the allied professions of Architecture and Engineering, the proposal is one which—applied to some trade or handicraft—would be indignantly scouted by these self-same Councillors as savouring of the methods of the "black leg"—it flies in the very face of the "fair wages" resolution in the House of Commons, and sets an evil precedent for every local authority throughout the country. Ever since the passing of the Local Government Act, qualified professional men have been endeavouring to induce those in authority to exercise some discrimination in regard to such appointments. How can the overworked Clerk of a Poor Law Union devote time to the laborious work of arranging all the minute details of building contracts and works generally, not to speak of designing works.

This proposed appointment appears to us to be pre-eminently one calling for prompt action upon the part of the Royal Institute of Architects and the Institute of Engineers. Ere it is too late, the Local Government Board should be approached, and, if necessary, the Chief Secretary to the

Lord Lieutenant, with a view to having the proposal vetoed. It is one of those questions which the members have a right to expect the Councils of their Institutes to act on promptly and sturdily. In many instances the L.G.B. have put down their foot on such abuses of authority—alas! in some cases only to lift it on a little pressure being applied. The hands of the L.G.B. need to be strengthened by the protests of the professional societies.

One thing only in this proposal has puzzled us. Why did not the South Dublin Guardians, when proposing to inaugurate this official of versatile genius, require of him that in addition to discharging the duties of a Civil Engineer, an Architect, and Clerk of the Union, he should also render medical attendance to the inmates of the Workhouse?—it would have saved money.

We do not know what is the average standard of remuneration for municipal services in Ireland, but the idea seems to be prevalent in London that the new Metropolitan Boroughs are taking a liberal view of the value of their officials' services. For Westminster—a small borough—is giving its Town Clerk £1,500 a year, and Wandsworth is starting at £1,000, rising to £1,250. Even Battersea, Fulham, Camberwell, and Hampstead have started their clerks with £1,000 a year apiece. Chelsea, more moderate, has begun by giving its clerk £600. It is true that the duties of the new Town Clerks are heavy, and that living in London is more expensive than living in the country. But it is as certain as the night follows day that every corporate official will ask for an increase whatever his initial salary. After a short term of service it would be preferable if the new boroughs started at a lower figure and worked gently upwards. To give the Town Clerk of Westminster £1,500 a year when the Clerk to the London County Council only gets £2,000 will not tend to reconcile ratepayers with the new regime in the boroughs.

Surely this is enough to make the mouths of our Irish local officials water.

The *Daily Chronicle* draws attention to a rather remarkable circumstance in connection with the unveiling of the memorial bust of the late Wm. Morris. In the reports of the proceedings the magic letters R.A. were generally attached to the name of Holman Hunt. As a matter of fact he, the greatest—in at least one sense—of the Pre-Raphaelite brotherhood, was never elected an Academician. Millais, one of the corps, became President of the Academy, but Hunt, one of the famous original three, and the man who exercised most influence in the school, is still outside. Yet his picture, "The Shadow of the Cross," that magnificent representation of the Virgin's vision, of the great tragedy, in the Carpenter's Shop—perhaps the most sublime and suggestive of all modern religious paintings—sold for a sum larger than any artist ever obtained for a work during his own lifetime.

Old Houses in Henrietta Street.

The announcement that a large number of the splendid mansions in Henrietta Street, Dublin, are again in the public market for sale induces recollections of this once most aristocratic street. It has sadly fallen from its high estate, and many of the noble houses have been for years past occupied by tenement lodgers. Primate's Hill was the old name of Henrietta Street, and was so called from the fact that four Primates—Boulter, Hoadley, Stone and Robinson—lived there one after the other. There also were built Blessington House and Sir Thomas Carter's (Master of the Rolls) beautiful residence. Speaker Ponsonby also resided here in former days, and was living here when

in 1771 he resigned the Speakership of the House of Commons. The Right Hon. Mr. Clements built a home for himself here, and another next door for Lord Inchiquin, which latter became later Speaker Ponsonby's. There the Lord Lieutenant dined with him one day in September, 1763, and a few days afterwards His Excellency dined in the same street with Lord Chancellor Bowes. Many stately equipages must have made their way to Henrietta Street in those times, and the beautiful houses still bear many traces of the wealth and taste of their former inhabitants, which included also Henry Boyle, Earl of Shannon, and Marguerite, Countess of Blessington. The name Henrietta as applied to the street is either from Henrietta Cantillon, as suggested by the late Mr. Prendergast, or, what is considered most probable, from Henrietta, wife of the Duke of Grafton, who, from 1721-1724 (in which latter year the street was built), was Lord Lieutenant of Ireland.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.



LECTURE BY MR. C. J. MACCARTHY.

On Tuesday, 18th ult., Mr. Charles J. MacCarthy, City Architect of Dublin, delivered a lecture entitled, "Some Intentional Irregularities of Italian Medieval Architecture." The lecture, which was a most interesting and instructive one, dealt in great detail with a number of exceedingly curious and remarkable instances of structural irregularities in Italian medieval churches. These irregularities were apparently first noted in modern times by Mr. Goodyear, an American architect, who attached so much importance to his enquiry that, assisted by a surveyor and a photographer, he entered on a regular course of enquiry, the results of which he duly published. These came under the notice of Mr. MacCarthy, who struck by the remarkable character of Mr. Goodyear's observations that he himself took the opportunity of enquiring personally into the matter by a couple of visits to Italy, with the result that he has become absolutely convinced of the correctness of Mr. Goodyear's conclusions—namely, that these so-called irregularities are absolutely the result of deliberate intention, and not due to constructive unskilfulness. The irregularities to which Mr. MacCarthy called attention take such form as the narrowing of the nave toward the east—the inclination diagonally of the central axis of the church—in some instances to so great an extent as eight feet by actual measurement; and in other instances a perspective reduction of the lines of the nave arcade by a continuous narrowing of the spans of the several bays, and curious to note such reduction is seldom regular, but on the contrary extremely unsystematic to all appearance. For instance, we get three or four bays regularly diminishing in span, and

then a wide bay—wider than any other perhaps. This is often held to prove that the irregularities were not the result of deliberate forethought, but rather of accident. Mr. MacCarthy strove to shew this to be further proof of artistic feeling, which disdained a purely mechanical reduction.

The lecture was illustrated by a large number of diagrams, and Mr. George Coffey, M.R.I.A., Curator of the Irish Exhibits of the Museum of Science and Art, shewed a number of lantern views, not only of Italian medieval work, but also of classical buildings of the Greek and Roman period, the similar studied irregularities of which went to afford a precedent and further proof of the correctness of Mr. MacCarthy's contention.

A hearty vote of thanks was proposed to Mr. MacCarthy and Mr. Coffey by Mr. T. E. Hudman, seconded by Mr. R. M. Butler.

The Classes of the Association have now been resumed. The first to begin work being "The Architectural History Class." Mr. W. F. Beckett lectured on "The Romanesque Period" on Monday 31st ult.

ARCHITECTURAL EDUCATION IN DUBLIN.

A novel scheme of practical education for intending architects has been inaugurated by the Architectural Association of Ireland. It is but four years since this society started on its career, and its membership has increased so rapidly that it now ranks with the largest societies in England and Scotland, with the exception of that in London. The scheme mentioned above is one of technical demonstrations, to be held each Friday at the workshop of some leading firm connected with the building and decorating trades. Each trade will be taken in rotation, commencing with the bricklayer and finishing with the glazier, and at these demonstrations the craftsman will be seen at work, and experiments will be conducted on the various materials used by him. Such practical instruction will be of great value to the student when practising his profession in later years. It is to the credit of this young Dublin society that it has drawn up so advantageous a scheme for its members on lines which have never been so broadly tried on the other side, and also of the manufacturers and builders who have readily placed their time and plant at the association's disposal.

OBITUARY.

DEATH OF MR. R. F. LIDWILL, J.P.

We regret to announce the death of Mr. Robert Francis Lidwill, J.P., which took place at his residence, 21 North Great George's street, on Friday, 28th ult. Mr. Lidwill was a prominent member of the Masonic and Orange Institutions. He succeeded the late Mr. J. R. Fowler as Grand Master of the City of Dublin Grand Orange Lodge, and was also Deputy Grand Master of Ireland. He was a member of Masonic Lodge 100. Mr. Lidwill took a keen interest in politics, and recently, in the South Dublin contest, actively supported the candidature of Mr. Ball. He was a member of the North and South Dublin Boards of Guardians, the Pembroke District Council, and other public bodies. In his business as a builder and contractor Mr. Lidwill met with great success, and he carried out many extensive works in Dublin and neighbourhood. The news of his death will be received with feelings of deep regret by a large circle of friends.

OUR ILLUSTRATIONS.

The "Billy Byrne" '98 Memorial, Wicklow.

We publish a sketch of this monument, lately unveiled. For the loan of the block we are indebted to the "Irish Daily Independent." The monument will be about 25 feet in height. The base is formed by a set of steps made of Wicklow granite. The pedestal, which rises on a plinth of polished granite, is of wrought limestone. In the centre there is a statue of Erin, with wolf dog, Celtic cross, and round tower. There are also worked into this part of the monument medallions of Michael Dwyer, General Holt, and William M. Byrne. The whole is surmounted by a statue of Billy Byrne, in Cecilian marble. The determination, the tenacity, and the athleticism of the man are represented with remarkable fidelity.

Irish Country Police Barracks.

The Constabulary Barracks in Irish rural districts constitute so important a feature that we believe the accompanying views of a few of the more picturesque stations will be of interest to our readers.

Nurses' Home, Curragh Camp.

THE LATE MR. R. RANDALL, F.S.I., ARCHITECT.

We herewith present our readers with drawings and specification for the Alexandra Nurses' Home, Curragh Camp, which has just been finished for the Council of the Soldiers' and Sailors' Families Association. We believe these will be appreciated by our readers, as given practical and useful information about work as actually executed. The building was erected for a lump sum of £950, which works out to 9½d. per foot cube. No quantities were taken out.

The architect was the late Mr. R. Randall, F.S.I., of Palmerston Park, Dublin, and the contractor was Mr. Patrick Sheridan, also of Dublin. The erection occupied fourteen months.

SPECIFICATION.

The Alexandra Nurses' Home, Curragh Camp.

Excavator and Bricklayer.

The sand to be clean, sharp pit or fresh-water Sand. sand of approved quality. It is to be washed if required when used with cement.

Sand, gravel, etc., obtained from the excavations, should it be desired and approved, may be used on the works on the site. for concrete, etc.

Site. The site to be excavated to the required levels, and filled in as shown on the site plan.

Excavation of trenches, etc. All excavations for foundations, drains, and water pipes, etc., necessary for the proper execution of the works to be made to the several widths and depths required as shown on the drawings, or to sink other widths or depths as may be directed.

Shoring to trenches, etc. Shore the sides of excavations if necessary, to secure them from falling in.

Fencing, etc., excavations. The excavations, if necessary, to be securely fenced in, and when ordered to be watched and lighted until completion.

Level, fill in, and ram. Level all trenches for foundations, and ram any soft and defective parts; also fill to foundations under pavings and over drain and water pipes, and well ram the earth.

Centering not to be disturbed. The centering for concrete work is not to be disturbed for at least 14 days from the time of laying the concrete.

The lias lime for concrete foundations to be freshly burnt and finely ground of approved quality.

Lias Lime. The cement to be Portland of approved quality.

Cement. The contractor binds himself to deliver the cement on the works, so as to allow ample time for testing, in order that if a brand fails at the test there will be time to try another before it is required for use.

Concrete. To be composed either of Portland cement or freshly burnt and finely ground lias lime, as hereafter described, mixed in each case with the desired proportion of clean gravel or local approved material of the required size.

The gravel may be obtained from pits, or to be of the description known as shingle, beach or ballast (not burnt clay), but in every case it must be large and coarse grain for foundations to pass 1½ in. ring, and for floors, etc., to pass a ¾ in. ring, intermingled with a quantity of fine gravel and sand, and free from loam and other impurities.

The proportion of small stuff and sand must not be more than enough to fill the interstices of the gravel.

If unscreened gravel is found to possess all the above qualities it may be used without further preparation, but if otherwise, the gravel must either be screened to remove any excess of small stuff, or else an addition of small stuff and sand must be made to it, as the case may be, before being mixed with the lime or cement.

When there is an insufficiency of small stuff and sand to fill up the interstices the extent of the deficiency may be ascertained by filling a vessel with gravel as compact as possible, struck level with the top, then pour in water to fill up the voids, after which carefully remove the gravel; the water remaining will then represent the quantity of fine stuff and sand required to be added to the gravel.

MIXING.—The ingredients, if made in large quantities, are to be mixed by first half filling a half cube yard, or other suitable measure, with the ballast, then adding the cement or lime, as the case may be, and finally filling up with the gravel and sand. The whole to be turned over dry, then shovelled to a third heap, at the same time adding from the rose of a watering pot sufficient water only to make the ingredients cling together.

If mixed in small quantities the ingredients are first to be mixed dry, then turned over, and then sprinkled with water as before stated.

The porous material should be well damped previous to mixing, but must not be wet on the surface when mixed.

The concrete to be deposited in layers not exceeding one foot in depth at a time, and to be levelled and beaten down with wooden beaters until the mixture comes to the surface. The concrete to be carried up uniformly over the whole area of the foundations, old work to be well wetted before adding fresh concrete.

Every care is to be taken not to disturb the concrete while setting, should it be necessary to pass over it when newly formed, planks are to be carefully laid down for that purpose.

All edges or surfaces that have become dry, where left off are to be swept to remove any dust, and well wetted before recommencing.

All surface work to be kept damp for at least fourteen days after its formation by flooding it with water, or covering it with damp sawdust, sand, or otherwise, as may be approved. The sand, etc., to be kept damp by sprinkling with water from the rose of a watering pot.

All exposed surfaces to be brought to a finished and even state, to be free from discolouration, and of uniform colour.

Each floor or roof is to be laid and completed in one operation where practicable.

Precautions must be taken to prevent the finished surfaces from being injured by falling materials, etc.

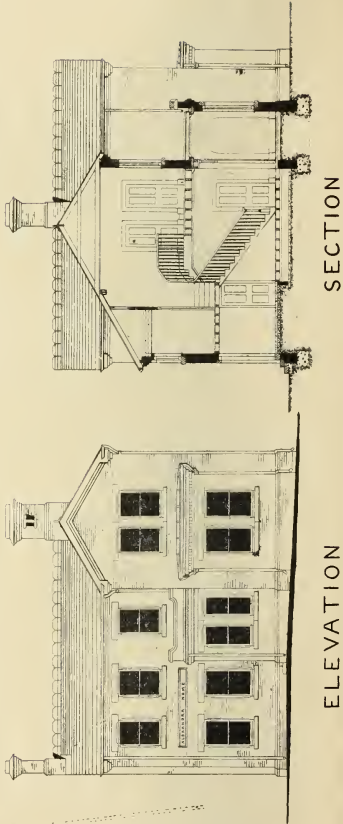
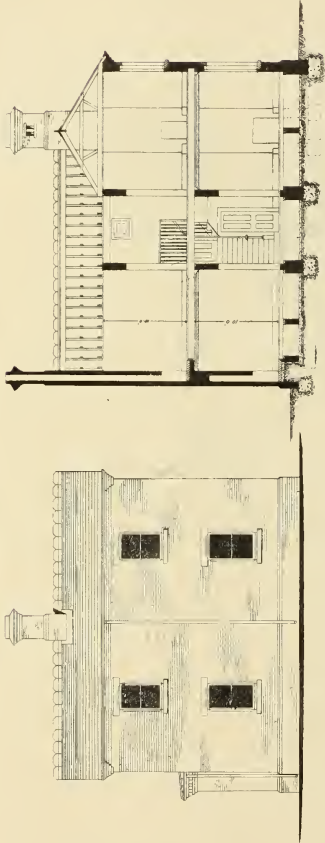
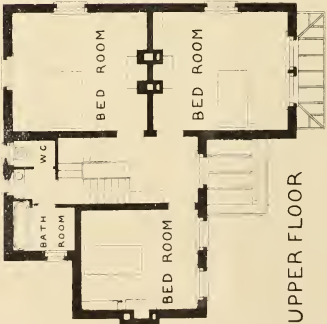
The work is not to be executed during frosty weather, or even if there should be any probability of a frost occurring before the concrete has had time to set.

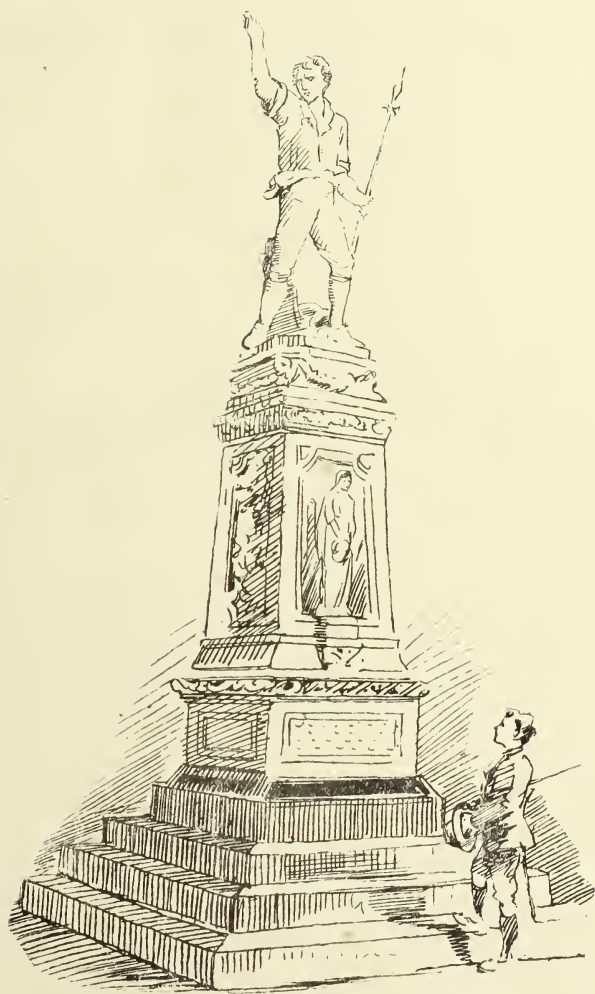
(To be continued.)

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NURSES HOME - CURRAGH.

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THE "BILLY BYRNE" '98 MEMORIAL, WICKLOW.

(Block kindly lent by "Irish Daily Independent.")

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Armagh.—Additions and improvements are about to be executed in the Mall Presbyterian Church, Armagh, according to plans, specifications, and conditions, prepared by Mr. H. C. Parkinson, architect, 11 College Street, Armagh.

Within the past five years St. Mark's Church, Armagh, has succeeded in raising for church renovation £2,370. This has not only covered the cost of the recent renovation of the church, but has left £227 15s. 5d. towards the erection of schools.

Piggeries and a slaughter-house are about to be built at the District Asylum, from plans and specification by Mr. R. H. Dorman, Poolsford, Armagh.

Ballycastle.—The Rural Council have presented a petition to the Local Government Board to adopt a scheme for labourers' cottages, at a cost of £4,500.

Celbridge.—Offices, etc., are about to be erected in connection with some labourers' cottages in the village of Lucan, for the Celbridge Union Workhouse.

Dublin.—The County Council have applied to the Local Government Board to borrow £4,000 for the purchase and repair of Council offices at 11 Rutland Square. They have also asked for tenders for plumbing and gasfitting work in connection with the same office.

One of the most enterprising, best equipped, and extensive firms in the class of builders' providers is that of Messrs Brooks, Thomas and Co., Ltd., Sackville Place. A visit recently paid to the establishment shows that its already immense proportions are still to be increased. In fact, the new building in Marlborough Street will very soon be complete. These new premises—to be devoted to sanitary and other engineering appliances—will form as it were the connecting link between the O'Connell St. end of the building and the Abbey St. end, where the very extensive saw mills are situated. Thus it will be seen that the whole length of Lower Abbey Street almost is occupied down to Beresford Place by the premises of the firm, though, of course, a good portion of the buildings are at the back of Abbey Street in Sackville Place. The departments in the business are very numerous, and only a very insufficient glance can be taken at them here. There is the house and ceiling, artistic wall paper, and similar kindred departments, the plate-glass department, mirrors, etc., the fire-grate and chimney-piece departments in which some exceptionally fine work is to be seen. The great central kitchen ranges are amongst the leading features of another department, and it may be mentioned appropriately here that Messrs. Brooks, Thomas have undertaken the supply, in these matters, of the kitchens of the new Portrane Asylum.

Tenders have just been called for the erection of buildings and chimney shaft for the Municipal Electricity Works at Pigeon House, Dublin, for the Electric Lighting Committee.

The citizens of Dublin will cordially approve of the project to erect a Central Public Free Library in Lord Edward Street, on the south side of the Liffey, and in a line with the

City Hall. About a fortnight ago the Public Libraries' Committee of the Corporation decided to adopt the plans of the proposed new building submitted by the City Architect, Mr. C. J. MacCarthy, C.E. A more suitable site for such an institution could scarcely be desired. It is most central, and of easy access from all parts of the city, and has the additional advantage of forming portion of the Municipal property. Indeed, the wonder is that such an admirable site should have been so long unoccupied and permitted to constitute a veritable eyesore in the very heart of the city. According to the plans prepared by Mr. MacCarthy, and now awaiting the sanction of the Municipal Council, the Central Library is to be erected at the east end of the vacant plot of ground on the north side of Lord Edward Street. The building will be three storeys high, with a basement. The front and end walls will be faced with granite and limestone. All the floors will be of concrete and iron construction, and laid with hard wood flooring blocks, tiles, or mosaic. The entrance hall will occupy a central position in the building, opening from Lord Edward Street, and will be about 20 feet wide by 24 feet in depth. At the rear of the entrance hall the lavatories, etc., will be located. The general reading room, 60 feet long by 36 feet wide, will be on the ground floor on the east, or right hand side of the entrance hall; and the newspaper and magazine room, 60 feet long by 30 feet wide, in the west, or left hand side. The lending department and part of the book stores will be on the first floor, directly over the general reading room; while the remainder of the book stores will be in the basement. A lift capable of carrying one or two passengers and a load of books will be fitted up between the book stores in the basement and the lending department. A small book hoist will also be fitted up so that any book when required can be rapidly sent from the book stores to either the lending department or the general reading room. A ladies' reading room, 48 feet long by 30 feet wide, is also to be provided on the first floor. The Gilbert Library, 60 feet long by 30 feet wide, and the museum, 60 feet long by 36 feet wide, will occupy the entire of the second floor. The Gilbert collection will form the nucleus of a library of books of reference relating exclusively to Irish matters. The museum is intended to afford accommodation for the preservation and display of objects of local municipal interest—charters, ancient muniments, and the like—and will certainly supply a long-felt want in this respect, almost every town of any importance in the Kingdom having some building set apart for purposes of that kind. The cost of the erection of the new building, exclusive of the furniture, is estimated at £28,000. The architectural attractiveness of the city will be immensely increased when it has been put up, and when the municipal buildings have been extended on the other side of Lord Edward Street—an improvement which is at present in contemplation, and which has become necessary in consequence of the extension of the city boundaries. It is intended that the new offices should form a continuation of the present municipal buildings on Cork Hill, extending up Lord Edward Street and Castle Street. No plans have been decided on yet, however, with regard to them. When the Central Public Free Library has been established and set going, the Public Libraries' Committee—who reserve to themselves the right of remodelling the internal arrangements of that institution as planned by the City Architect, intend to formulate a scheme for the establishment of branch free libraries in every district of the city—including, of course, the recently added area. At present there are three public free libraries open in the city—one in Capel Street, one in Thomas Street, and another at Charleville Mall; and the Municipal Council have already authorised the erection of two additional libraries, one in the Mansion House Ward,

and one for the Trinity and South Dock Wards. They are just now looking out for suitable sites for these new buildings, and, indeed, the great difficulty they have in reference to starting libraries is that of securing suitable sites.

Letterkenny.—The Letterkenny Rural District Council having adopted a scheme for the erection of nine single and one double cottages for labourers, in lieu of houses condemned by the medical officers (Dr. Irwin and Dr. Carre) as being unfit for human habitation, Mr. Richard Kelly, Local Government Inspector, on Thursday held an inquiry into the merits of the scheme. There was little opposition to the proposals, except that two occupiers offered alternative sites. The case for the District Council in support of the scheme was put by Mr. Edward McFadden, M.P. The labourers were represented by Mr. Tracy. Mr. John Mackey, S.C.S., was present on behalf of Major-General Stewart, and Mr. John Quigg represented one of the occupiers. Mr. P. McFadden (chairman) and several members of the District Council were present, also Colonel Dopping, agent for Mr. W. H. Boyd, D.L. Mr. R. S. Watters, Clerk to the Council, proved that the estimated cost of the scheme—£2,000—would put about ½d. in the £1 upon the rates.

The Inspector—That is assuming there is no rent got from the cottages, and that there is no Government grant? Exactly. In reply to Mr. Tracy, witness said there was a larger number of representations sent in, but the remainder had been rejected on the ground that the houses in which the applicants lived were capable of being repaired. Mr. Tracy asked to have the scheme enlarged by the inclusion of these rejected representations. The Inspector said he had no power to add houses to the scheme, but if necessary he could report that in his opinion, having regard to the evidence, the scheme was insufficient. Mr. Tracy said he understood the larger scheme had been opposed on the ground that it would add to the rates. Mr. McClafferty had spoken against it. Mr. McFadden said there was a better understanding of the Acts now, and there was no opposition. The Inspector said no doubt when it was known the rates would not be affected the opposition to legitimate applications would not be pressed. Mr. O'Callaghan, architect, submitted plans of the proposed houses. The Chairman of the Council (Mr. P. McFadden), examined by Mr. Tracy, said his personal opinion was that a larger scheme was necessary, having regard to the condition of many of the houses in the Union. Mr. Tracy also produced further evidence to the same effect. The Inspector thought a case had been made out for a larger scheme, which perhaps the Council would see the advisability of promoting. Mr. E. McFadden proposed a vote of thanks to the Inspector for his impartiality and for the courtesy with which he had conducted the inquiry. Mr. Tracy begged on behalf of the labourers to second the vote of thanks. Mr. Kelly thanked the gentlemen, and the inquiry terminated.

Omagh.—At a recent meeting of the Rural Council a discussion took place with reference to the labourers' cottages about to be erected in the Union. It was thought that it was time that they promulgated a scheme for the erection of fifty more cottages, as they were entitled altogether to 150 cottages, of which 100 had been sanctioned.

Strabane.—A Methodist new Church has been built, and is about to be opened at Strabane. The old Methodist Church in that town had long been condemned, and the new erection will prove a great boon to the congregation.

Waterford.—The meeting to initiate the movement for the restoration of the French Church, Waterford, as a tribute to Field-Marshal Lord Roberts, has been held under the chairmanship of the Marquis of Waterford. The scheme of restoration can be carried out for about £3,000.

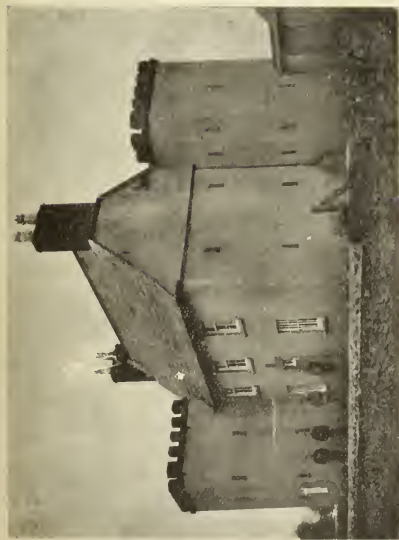


Armagh.—A special meeting of the Urban Council was held lately. The principal business of the meeting was the consideration of several matters regarding the sewerage scheme at present in course of being carried out, and the work in connection with which is progressing very favourably under the contractorship of Messrs. Spittal and Co. The questions under discussion were the purchase of land in connection with the scheme, and also the question regarding the making of the railway culvert and the carrying of the sewerage past the railway station and premises. Mr. Peddie (Belfast), the civil engineer in charge of the scheme, went into the matter of the railway culvert at length. After discussion, a resolution was proposed by Mr. James Maxwell, seconded by Mr. James Lennon, and passed unanimously, that, having heard Mr. Peddie's explanation, they approved of the diversion of the line of pipes, and that Mr. Spittal hand to the town clerk a cheque for the deposit required by the railway company, so that the matter may be attended to at once, and that the additional cost of the diversion should not exceed £42.

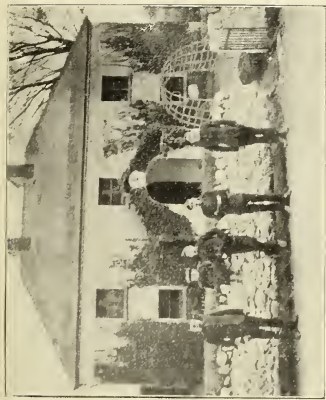
Bangor.—Mr. P. C. Cowan, M. Inst. C.E., chief engineer of the Local Government Board, held an inquiry at Bangor with reference to an application by the Urban Council for a loan of £4,800 for the purpose of carrying out water and sewerage works in the urban district. The town clerk (Mr. Thomas Morgan) stated that the proposed loan included £3,750 as regards new main from the reservoir to the town, and new distribution throughout the town. The valuation of the houses and other hereditaments in the town was £22,954 5s., and the valuation of the land £1,088 10s. The total borrowing powers of the town was £46,452 15s., and the town's indebtedness, including loans sanctioned but not yet received, £37,575 8s. 3d. The balance of the town's borrowing powers was £8,877 6s. 9d. The rates of last half-year was 2s. 8d. per £1, and it was the same in the present half-year. The town surveyor (Mr. Ernest L. Woods) was also examined.

Blackrock.—Mr. O'Brien Smyth, C.E., Local Government Board Inspector, held an inquiry in the Town Hall, Blackrock, in connection with an application of the Urban District Council for a loan of £750 for certain sewerage works in the town and vicinity. Technical evidence having been given by the township surveyor, Mr. F. Byrne, C.E.; Mrs. Dockrell, Deputy Vice-Chairman of the Council; and Mr. W. H. Knapp, M.A., U.D.C., expressed the opinion that the proposed work was absolutely necessary, and the Inspector said he would report in the usual way to the Local Government Board. There was no objection to the application.

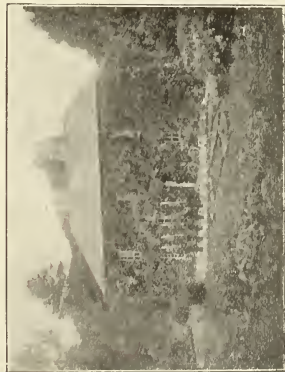
Drogheda.—We are glad to note that the movement initiated by prominent local business men in furtherance of a project for connecting the Drogheda Quays with the Great Northern Railway is making excellent progress. At a large and influential meeting of the Drogheda Chamber of Commerce, held last week, the proposal was discussed in all its bearings, and the opinion of those present was unanimous that it was essential in the interests of the port that the scheme should be carried out.



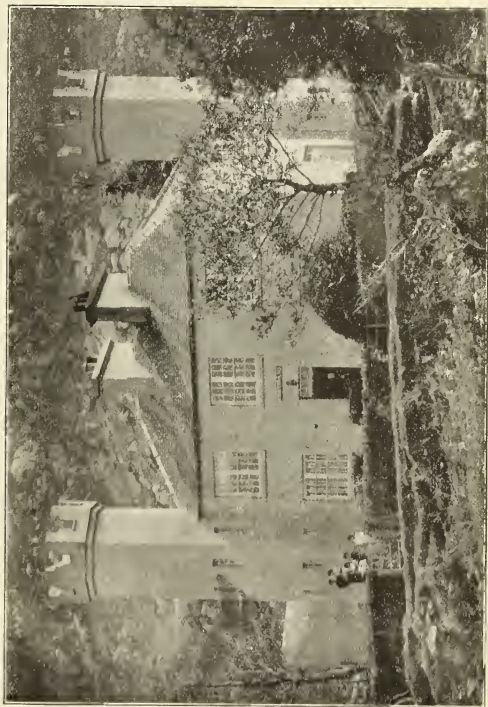
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BALLYGLUNIN.



GLENGARIFF.



MULGRAVE, KILLARNEY.

A FEW IRISH COUNTRY POLICE BARRACKS.

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It is stated that the cost of making the connection between the quays and the railway would be some £20,000. At first sight the sum may seem a large one, but on the other hand, when the magnitude of the interests at stake is considered, the outlay involved appears of trifling importance. When it is a question of the future prosperity or the continued decline of one of the best known ports on the east coast, there should not be a moment's hesitation about adopting the only remedy for what amounts to a very serious state of things. We are sure that this view will commend itself to the directors of the Great Northern, who are all business men of the highest ability, and who consequently will not be slow to perceive that the interests of their shareholders lie in doing everything possible to promote the prosperity of the Port of Drogheda.

Dublin.—The householders of Harold's Cross and Terenure are deeply interested in the early carrying out of the scheme for connecting the drainage system of their district with that of Rathmines. Some considerable time since the permission of the Rathmines Town Commissioners was sought by a committee representing the people of Harold's Cross and Terenure for the purpose of having the necessary works executed. As becomes the gravity of such an important body, the Council move slowly and with great deliberation, and, consequently, they have not been in a hurry to give their answer to the committee which approached them. From the letter, however, which was read at a meeting of the Port and Docks Board from the Secretary to the Commissioners, asking if the port authority would have any objection to allow the Harold's Cross and Terenure sewers to be drained into the river, it is to be gathered that the negotiation is making some progress. It is to be hoped, in the interests of the large districts concerned, that no obstacle will arise to delay the carrying out of an important work of sanitation.

Mr. A. D. Price, M.I.C.E., has held an inquiry into the application of the Drumcondra, Clonliffe and Glasnevin Urban District Council for a loan of £573 for the purpose of laying water mains.

If the Dublin Corporation meet the same difficulty and disappointment at the various stages of their electric lighting scheme as they have met up to the present the outlook is not a promising one for the citizens. A short time ago Mr. Hammond, C.E., made a mistake of some £10,000 in totting up the figures of a tender, which rendered it necessary to change a contractor; but now, with the second stage, the Corporation are beset with a much greater and more serious difficulty. Tenders for the erection of a power house on the Pigeon House site were advertised for some time ago, and the Electric Lighting Committee met to open and consider those that were received. Mr. Richard Jones (chairman of the committee) presided, and there was a good attendance of members, including the Lord Mayor. The following four tenders were received:—Messrs. Stewart, Belfast, £41,000; Messrs. Good, Dublin, £47,000; Messrs. Martin Dublin, £47,000; Messrs. Pearson, London, £52,000. Messrs. Pearson are the present contractors for the main drainage works, and they make a speciality of the work tendered for; but it is understood that their tender contained a proviso that, in the event of the foundation not proving satisfactory, an additional sum of £4,000 or £5,000 was to be allowed them, and from what has been ascertained it seems that this contingency is a most probable one. When it is known that Mr. Hammond's estimate for the work was £20,000, it will easily be understood what consternation and disappointment were experienced by the Lord Mayor, Mr. Jones, and the other promoters of this enormous and expensive scheme. The lowest tender received was £21,000 above Mr. Hammond's estimate, and the tender of

Messrs. Pearsons, very desirable contractors, was from £32,000 to £37,000 over his figure. When the tenders were opened and the figures stated astonishment and indignation were expressed at the wide difference between Mr. Hammond's estimate and the actual figures in the tenders, and, after a warm discussion, it was decided to get Mr. Hartly (Borough Surveyor) to submit a report on the tenders for the next meeting of the committee.

Kells.—The Urban District Council are about to carry out waterworks, including the following works:—To supply, deliver and erect at Lloyd, Kells, Co. Meath, at the Waterworks of said Council, one 15-inch Victor Turbine with vertical shaft, regulating spindle column wheel and gear, plumber blocks and brackets, and including a set of horizontal single acting 3-throw pumps rams, 4-inch diameter by 12-inch stroke, running at fifty revolutions per minute, driven by bevel wheel gearing from the above turbine, to deliver 100,000 gallons of water in 24 hours a vertical height of 200 feet, through 1,050 yards of 4-inch rising main, with the necessary suction piping, but no delivery piping beyond the connecting delivery piece; the above to be a duplicate of the existing pumping plant, but without the wrought iron grating and plate girders which are already fixed.

Kingstown.—A WONDERFUL INVENTION THAT WILL SUPERCEDE COAL.—The invention of Mr. Joseph Knight Armenia Street, Holyhead, to utilize air-power for driving engines is exciting much interest in engineering circles. Some seven years ago Mr. Knight conceived the idea, and after considerable thought produced a model which was found to work admirably. On submitting the invention to some eminent engineering experts they spoke of it in glowing terms, and declared it to be the coming power as a propelling force in the near future. It is claimed for the invention that by it coal will be done away with as a motive power. An important consideration is that the entire cost of coal will be saved. More than this, it will end the smoke nuisance, while the saving to ships in storage room and time, through the abolition of the necessity to carry coals and the frequent stoppages at coaling stations will be incalculable. The Admiralty are already negotiating with the inventor. If all that is claimed for the invention is true, it will, of course, revolutionise the navy. The inventor is the son of a Kingstown man, now deceased, who was chief officer of the Royal Mail steamers to Ireland. He was born at Holyhead, and is only 25. For years he has been engaged in electric and marine engineering work. He is working on other inventions.

Mountmellick.—THE WORKHOUSE DRAINAGE.—The Local Government Board wrote stating they had referred the plans, specifications, and estimates of the works in connection with drainage, etc., of the House—for the carrying out of which the Guardians propose to obtain a loan of £800—to their engineering inspector, Mr. O'Brien-Smyth, who reported that the plans were roughly prepared by Mr. Bannan, clerk of works—the specifications and estimates were fairly complete, but the fall of the drain, 2 ins. in 20 feet, was not sufficient, nor the depth 12 inches; the overflow from the cesspool was specified to discharge into a manure yard situated in line with the main building and about 50 yards distant, which is objectionable. The Local Government Board were of opinion that where such a large expenditure is contemplated the services of a competent engineer or architect should be engaged to prepare plans, etc., and also to superintend and certify for the work done, and they accordingly requested that the Guardians would be so good as to reconsider the matter.

Omagh.—At the monthly meeting of the Urban Council Mr. J. L. Donnelly, the urban surveyor, submitted the proposed new sewerage scheme, which he estimated would cost about £600. Some discussion took place on it, and eventu-

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ally, on the motion of Mr. Houston, seconded by Mr. Clements, the scheme was approved of, and it was decided to requisition the Local Government Board to grant a loan of £500 for the purpose.

Railways.—Six light railways are about to be constructed in the Counties of Kerry and Cork in connection with the Bantry, Berehaven Harbour, and Kenmare Railway. The gauge is intended to be 5ft. 3ins.

LAW CASES.

EMPLOYERS' LIABILITY.

THE DIFFERENCE BETWEEN CONSTRUCTING AND ERECTING A BUILDING.

In the House of Lords on December 10th the case of *Hoddinott (pauper) v. Newton, Chambers and Co., Ltd.*, was heard. This was an appeal from a judgment of the Court of Appeal, and it arose under the Workmen's Compensation Act. The action was originally brought in the County Court under the Employers' Liability Act, 1880, by the widow of Benjamin Hoddinott, a riveter employed by the respondents, contractors, Westminster, to recover compensation for the loss of her husband, who was killed through alleged negligence. One Parker, a builder, had under contract completed the construction of a building in Lower Richmond road, Putney, which was used as stables by the London General Omnibus Company. After the completion of the building the company employed the respondents to fix certain iron stays in the ground floor from girder to girder to stiffen or strengthen them. The work was performed by Hoddinott and another man on a scaffold about 8ft. or 9ft. from the ground, which was put up in the morning and taken down at night. The buildings or stables were

more than 30ft. in height. On August 19th, 1898, as one of the stays was being lifted, it tilted, and striking Hoddinott threw him off the scaffold on to some bricks, and he died from the injuries he received. The County Court Judge held that the scaffold was not insufficient, and that the accident was not caused by any insufficiency of the scaffold, and he gave judgment for the defendants. Counsel for the plaintiff then applied for compensation under the Workmen's Compensation Act, and after taking further evidence the judge held that the plaintiff was entitled to damages under that Act, and he awarded her as compensation £245 14s. The Court of Appeal reversed that decision, and gave judgment for the respondents, mainly on the ground that, in the words of the statute, the man was not employed on a building that was being constructed or repaired, but on a building that was being added to or altered. Lord Macnaghten, in now giving judgment, said that all the learned judges concurred in holding that the building in which the accident happened was not at the time being constructed nor being repaired, and that the respondents were not undertakers within the meaning of the Act. The ground of their decision was stated very clearly by Lord Justice Smith: "Were the ironfounders," he asked, "who put in these stays constructing the building? That cannot be," said his Lordship, "for it had already been constructed, and what was then done was only an addition to that which it had already been contemplated would be wanted. How could it be said that the man was employed in a building which was being constructed? The construction was at an end, but some strengthening was afterwards needed to be done." He did not think that construction could be limited to the original construction. That would be in effect substituting "erection" for construction. Construction, repair, demolition—these covered, he thought, the varying phases in the life of a building from its beginning to its end. He preferred to rest his

judgment on this broad ground, but he could not help thinking that something narrower would lead to the same result in the present case. One would say with the strictest propriety that a building was in the course of construction when it was being reconstructed in order to make it what it was intended to be, a firm substantial structure, capable of resisting the action of the wind. He thought that in this case the learned judges of the Court of Appeal had taken too narrow a view. If they construed the words of the Act so narrowly as to exclude one of the commonest operations of the building trade, the alteration of a building already erected, and so debarred a workman engaged in that operation from all benefit of the Act, they would, he ventured to think, violate the letter as well as the spirit of the Act. The appeal ought to be allowed with costs in the Court of Appeal.

OLD BELFAST.

LECTURE BY MR. R. M. YOUNG, J.P.,
ARCHITECT.

An interesting lecture on "The Progress of Science as Applied to Industry and Commerce" was recently delivered by Mr. R. M. Young, B.A., J.P.

Mr. R. M. Young said he purposed, by way of introduction, to lay before them a few facts relative to their town one hundred years ago which might not be familiar to them. He should then treat briefly of some results of science in connection with industry and commerce, and conclude by showing a few examples of buildings and machinery from the Paris Exhibition, as affording good illustrations of the latest progress which has taken place. Even a century ago their town was a notable place. Cotton spinning had been lately introduced by Robert Joy. The linen trade was in its infancy. There were 629 cotton looms in the town, 35 for sailcloth, 5 for sacking, and only 4 for linen. There were several small industries now extinct; glassmaking was carried on in Ballymacarrett successfully, and of Belfast cut-glass some beautiful specimens still survived. The same might be said of the pottery, which existed close to Coates' Foundry. Tobacco pipes were made in John Street, mustard in Mustard Street, and ropemaking flourished. The tanners were numerous enough to have a club of their own. The first steam engine was erected in 1808 at Stevenson's Mill, Springfield, where it was employed for some time pumping up water to supply a water wheel—such was their ancestors' simplicity in mechanical matters (laughter). At this period trade was much hampered by the slowness of locomotion. On land the roads were so bad that when the Duke of Rutland as Lord Lieutenant came to Belfast he promised, when entertained at a banquet by the citizens, to do anything he could officially for the town. But on being asked to have a coach run between Dublin and Belfast, he replied that that was impossible, as the roads were too bad to allow of such traffic. At sea the tedious and uncertain voyages of sailing ships were notorious. It was the rule to make one's will before crossing to Liverpool or Glasgow. A fortnight was sometimes consumed en route. French and American privateers infested the Channel, and merchant vessels were often armed as a precaution against them. Some of those old ships' guns were still to be met with in narrow entries near the quays, acting the peaceful part of fenders at gateways. Seven of them formed a battery on the Queen's Island years ago, but were recently sold as scrap by their economical Harbour Commissioners, leaving their port totally unprotected by artillery (laughter). Strange tales were told of Belfast merchants who made a good thing amidst wars alarms. Waddell Cunningham, whose portrait

hung in the Harbour Office as a former Chairman of the Belfast Ballast Board, sent several fine vessels laden with valuable merchandise, including ammunition, all well insured, to the West Indies. Most unfortunately they were invariably taken by American privateers, and their cargoes, especially the war material, fully appreciated by the rebellious colonists. At the close of the war it leaked out that the vessels sent out by the wily Belfast merchant met, by previous arrangement, with the Americans, who paid a high price for the vessels and cargo, which, added to the insurance, paid remarkably well. Two of the greatest factors in the development of the country's industry and commerce sprang into being in its early years. One of these was James Watt's steam engine, which revolutionised industrial progress; the other was the invention of the steamboat, quickly followed by George Stephenson's locomotive. These rendered possible the quick transmission of goods, which had in turn caused the immense results of modern commerce. The first steamship to ply between any two ports was the "Rob Roy" in 1819, which arrived here one Sunday morning from Glasgow to the infinite surprise of the townspeople, who flocked to the quay in all their finery to gaze on the little uncouth vessel, with its tall chimney vomiting black smoke in such an alarming manner, that the coast guards at Blackhead manned their boat and boarded the supposed vessel on fire (laughter). Having referred to ship-building in Belfast, Mr. Young, continuing, said it was probable that the greatest industrial triumph of the first half of the century took place in the wonderful development of spinning and weaving, wool, cotton, and flax. The first two materials were the staples for many years of the North of England, and the latter of the North of Ireland. At that distance of time they could hardly realise how much production was hampered by the want of machinery. Handloom weavers could only turn out small quantities of fabrics at high prices, and these were so quickly disposed of locally that little remained for exportation. Mulholland's cotton mill in York Street was burnt down in 1828 owing to a bullseye pane focusing the rays of the sun on some oily cotton waste, and thus acting like a burning-glass. When rebuilt two years later it was decided to start flaxspinning by machinery, as the competition of Scotch and English cotton spinners was excessive. This proved so successful that Durham Street and Blackstaff Mills were erected by the Mulhollands, and the industry soon attained large proportions, as wet line spinning superseded the dry process. Other improvements followed from time to time, which had enabled their staple industry to compete successfully with the foreigner in every quarter of the globe.

High-Class Joinery and Cabinet Work in Dublin.

We have lately inspected certain fittings for the new branch of the Munster and Leinster Bank, Tralee, in the workshops of Messrs. Arthur Jones and Sons, Stephen's Green, Dublin. The work comprises porch, cash office, counter, etc. It is all executed of the finest Domingo mahogany, French polished. The general finish of the work is really excellent, and it is gratifying to find such good work being carried out in Dublin—a city which boasts traditions of cabinet work second to none the world over. The moulding struck us as being run with much delicacy and precision. The whole of the work is carried out from the design of Mr. L. A. MacDonnell, architect. The general contractor for the building is Mr. John B. Healy, of Tralee, and the structure is now practically completed.

ARCHITECTS PUPIL:—Vacancy in a leading Dublin Office in good practice. Exceptional opportunities of acquiring professional experience.—Reply, B.A., *Irish Builder Office*, 11 Lower Sackville Street.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

Appointment of Consulting Architect to the Government of Bombay.

The President wishes to announce that he has been desired by the India Office to assist them in the appointment of Consulting Architect to the Government of Bombay.

The salary would be 1,600 rupees a month (*i.e.* £1,900 per annum in India, or £1,300 in England), and in all probability offices would be provided. The officer selected should be competent to assist the Government in designing and reviewing plans of important buildings. He would be required to enter into an agreement for a term of either three or five years; the engagement to be capable of extension thereafter, if so desired, and to be terminated with six months' notice on either side.

The President would be very glad if members would assist him in the matter. Should any member be inclined to offer himself as a candidate for the post, he is requested to send in his application to the President not later than the 31st December.

Revision of the Paper of "Suggestions for the Conduct of Architectural Competitions."

At the next General meeting of the Royal Institute of British Architects the Chairman will move the adoption of the amendments and additions indicated below, in the Paper of "Suggestions for the Conduct of Architectural Competitions." The Paper as revised reads as follows:—

1. The Promoters of an intended Competition should, as their first step, appoint one or more Professional Assessors, architects of established reputation, whose appointment should be published in the original advertisements and instructions, and whose decision should govern the selection of the designs.

The President of the Royal Institute of British Architects is always prepared to act as honorary adviser to Promoters in their appointment of Assessors.*

All the designs sent in should be submitted to the Assessors.

2. The duty of Assessors should be—

(a) To draw up the particulars and conditions as instructions to competitors, and to advise upon the question of cost;

(b) To determine which of the designs conform to the instructions, and to exclude all others;

(c) To advise the Promoters on the relative merits of the designs admitted to the competition, and to make a selection in accordance with the conditions.

3.† Every Promoter of a Competition, and every Assessor engaged upon it, and any employé of either, should abstain absolutely from competing, and from acting as architect, for the proposed work.

4.‡ The number and scale of the required drawings should be distinctly set forth, and they should not be more in number, or to a larger scale, than necessary to clearly explain the design. If perspective views be required, it should be so stated; and they should be uniform in size, number, mode of colouring, mounting, or framing (if any), &c.

* This sentence is new.

† Clauses 3 and 4, as they stand in the existing document, are as follows:—
3.—Every Promoter of a Competition, and every Assessor engaged upon it, should abstain absolutely from competing, and from acting as architect, for the proposed work.

4.—The number and scale of the required drawings should be distinctly set forth, and they should not be more in number, or to a larger scale, than necessary to clearly explain the design. If perspective views be required, it should be so stated; and they should be uniform in scale, number, mode of colouring, &c.

5. Competitions should be conducted in one of the following ways:—

(A) By advertisement, inviting architects willing to compete for the intended work to send in designs. The promoters, with the advice of the Assessor or Assessors, should make their selection from such designs. The author of the design awarded the first place should be employed to carry out the work.

(B) By advertisement, inviting architects willing to compete for the intended work to send in their names by a given day; with such other information as the candidate may think likely to advance his claim to be admitted to the Competition. From these names the Promoters, with the advice of the Assessor or Assessors, should select: (a) an architect to carry out the work; or (b) a limited number to compete, and each Competitor thus selected should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

(C) By personal invitation to a limited number of selected architects, to join in a Competition for the intended work. Each competitor should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

6. No design should bear any motto, device, or distinguishing mark; but all designs should be numbered by the Promoters in order of receipt. Any attempt to influence the decision of the Promoters, or of the Assessor or Assessors, should disqualify a Competitor.

7. In every case the amount of premium or remuneration for the competitive designs should be fixed ‡ under the advice of the Assessor or Assessors, and should be paid in addition to the usual professional charges for carrying out the work.

8. Where a deposit is required for supplying the instructions, it should be returned on the receipt of a *bona fide* design; or if the applicant declines to compete and returns the said instructions within a month after their receipt.

9.§ Each design should be accompanied by a declaration, signed by the competitor, stating that the design is his own personal work, and that the drawings have been prepared under his own supervision.

10. A design should be excluded from a Competition—

(a) If sent in after the period named (accidents in transit excepted).

(b) If it does not substantially give the accommodation asked for;

(c) If it exceeds the limits of site as shown on the plan issued by the Promoters, the figured dimensions on which should be adhered to until officially altered;

(d) If the Assessor or Assessors should determine that its probable cost will exceed the outlay stated in the instructions, or the estimate of the Competitor should no outlay be stated; provided always that should the Assessor or Assessors not have been consulted in the first instance respecting the cost, as recommended in paragraph (a) of Clause 2, and should he or they be of opinion that the outlay stated in the instructions is inadequate for the proper execution of the proposed works, the

‡ The existing clause reads:

7. In every case the amount of premium or remuneration for the competitive designs should be fixed by the Promoters, acting under the advice of the Assessor or Assessors, and should be paid in addition to the usual professional charges for carrying out the work.

§ Clause 9 is entirely new, and the following clauses have been re-numbered.

Assessor or Assessors shall not be bound in the selection of a design by the amount named in such instructions, but the question of cost shall nevertheless be a material element in the consideration of the award.

(e) If any of the other instructions are violated.

11. It is desirable that all designs submitted in a Competition, except any excluded under Clause 9, should, with the consent of their authors, be publicly exhibited after the award has been made, which award should be published at the time of exhibition.

12. The architect whose design may be selected as the best should be employed to carry out the work, and he should be paid in accordance with the Schedule of "Professional Practice as to the Charges of Architects" sanctioned and published by the Royal Institute. If no instructions are given to him to proceed within twelve months from the date of the selection, he should receive adequate compensation in addition to the premium (if any) awarded to him. In the event of a part only of his original design being carried out, he should be paid a sum to be agreed upon in respect of the deferred portion, such sum to be merged in the usual professional charge when the completion of the design is proceeded with.

** * It should be understood that the Royal Institute issues these Suggestions as a guide to Promoters where a Competition has been decided upon, but not as necessarily recommending the principle of competition.*

The Status of the Profession.

At the same meeting Mr. Lewis Solomon [F.] has given notice of his intention to move the following resolution:—

"That the Institute is responsible for the inferior position of architects as compared with that of other professions, and that a committee be appointed to inquire into the causes of this inferiority of status and to suggest remedies."

CORRESPONDENCE.

BELFAST ASSEMBLY HALL COMPETITION.

To the Editor of the Irish Builder.

London, 5th December, 1900.

SIR,—I have read with much interest the article and the correspondence published in your current issue, in which is held up to light the practices of the Committee and their advisers in relation to the above competition. It is unnecessary for me to revert to the circumstances under which the conditions were drawn up; their being compiled and arranged by local men, who were not to act as assessors, and were not debarred from competing if they were so minded, and to the fact that these same men are now employed as Architects for the work.

Is it not extraordinary that out of the great number of designs submitted, faithfully following the requirements set out in the conditions, not one was found to be "suitable."

Why was this? Was it because none of the competitors possessed the ability to design a building, complying with these conditions, and suitable for the purpose, or was it that the conditions were defective and misleading? There is little doubt that the latter is the true solution of the abortive competition.

In his letter, published in your current issue, the Chairman assumes honour and glory to himself and his Committee for having righteously presented the advertised premiums to the authors of the premiated designs, although by the iniquitous clause in the conditions, this payment could have been evaded. It is amusing to note that no line has been appropriated from Mr. Savage's design, and that

his designs were not submitted to the now Architects. "The Committee exercising their right of free judgment selected a firm of Architects of acknowledged position and put the matter into their hands." It is difficult to understand why the Committee did not do so in the first instance. Is it only since the competition that the Committee has awakened to the fact that they had in their midst men of "acknowledged standing," who were capable of designing and carrying out their building much better than any of the host of competitors who entered into the competition? These are questions which I leave to the public to answer.

Is this only another instance of the many unfortunate competitions in which the fortunate Architect for the carrying out of the work had been already selected?

The flagrant and unblushing injustice of competitions as generally wrought has been felt by many, and yet we appear to be no nearer to any solution of the difficulty. The learned and sage Fathers of the profession, sitting in Council in Conduit Street, have often debated the subject, but so far to no purpose.

Is it not time that Architects should take the matter into their own hands, and make some effort towards the protection of their profession, which is, at present, open to the incursions of piratical and incompetent "persons"? Such a protection would be afforded by "The Act for the Registration of Architects" now before Parliament.

Until Architects, collectively and individually, awakened to the necessity for such protection and shake off their slothful indifference, they must expect to have their domains invaded and their rightful commissions slipped from between their unready fingers.

In the controversy which has taken place upon the subject, it is a comfort to notice the entire absence of the slightest attempt to cast any blame on the eminent, honest and straightforward Assessor—Sir Thomas Drew.

I am,

Yours faithfully,

W. A. SCOTT, A.R.I.B.A., M.S.A.

TO BUILDERS AND CONTRACTORS.

HOUSING OF THE WORKING CLASSES ACT, 1890.

URBAN DISTRICT OF KILLARNEY, COUNTY OF KERRY.

NOTICE is Hereby Given that the Killarney Urban District Council are prepared to receive Tenders for the Erection of

WORKING CLASS LODGING HOUSES

under the provisions of the above Act, according to Plans and Specifications to be seen at the Office of the Council.

It will be optional for persons Tendering to Tender for not less than 7 one-storey cottages and 5 two-storey cottages.

The declared Contractor will be required, within ten days from the acceptance of his Tender, to enter into a Bond with two Solvent Sureties in a sum to be settled by the Council for the due performance of the Contract, said Bond to be prepared by the Law Agent of the Council at the Contractor's expense.

Sealed Tenders, containing the names of such Sureties, must be delivered to the undersigned before 12 o'clock (noon), on Monday, the 7th day of January, 1901.

An agreement of form of Contract shall also be signed by the Contractor and the Council at the same time as the Bond; said agreement to provide for such matters as are not specifically provided for in the Specification, e.g., Date of commencement and of completion of contract work, extension of time, method of payment, &c.; such agreement or form of contract to be prepared at the Contractor's expense by the Law Agent of the Council.

The lowest or any Tender not necessarily accepted.

Signed this 21st day of December, 1900.

MICHAEL HEALY, Clerk of the Council.

BREVITIES.

The Victoria Hospital, Folkestone, is being warmed and ventilated by means of Shorland's patent Manchester Stoves with descending Smoke Flues, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Tall Chimney.—The second highest chimney in Europe has just been constructed at Hoboken, near Antwerp. The chimney, which belongs to the silver works, is 406 ft. high, the diameter at its base being 25 ft., and that at its summit 10 ft.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester Grates to the New Cottage Hospital, Carnarvon.

New Window.—Lady Osborne, Beechwood, has presented a very beautiful stained glass window to her parish church of Kilruane, North Tipperary, which was recently dedicated by the Right Rev. Dr. Archdall, Bishop of Killaloe.

Glenarm Church.—The chancel floor of Glenarm Parish Church has just been laid with ancient tiles, rich glazes, and similar to those used in the pavements of St. Patrick's and Christ Church Cathedrals, Dublin. Some few years ago a handsome new chancel was added to this church, and it only remained to complete the work by means of this new tiling.

Harry Hems' feast to the Aged Poor.—For the thirty-second annual and successive time Mr. Henry Hems entertained a large number of Exonians' aged poor at his studios in Longbrook Street, Exeter, on Christmas Day. The venerable old guests, who numbered exactly eighty, forty of each sex, assembled in one of the large wood-carving studios, which for the nonce had been transformed into a veritable and quite ideal banquetting hall. The tables were charmingly and most artistically laid, and every guest had a pretty pictorial menu card.

St. Patrick's, Maynooth.—The tower of the church of St. Patrick's College, Maynooth, which has been in course of construction for the past thirteen months, has now attained the elevation of 101 ft. The total height of the tower and spire when completed will be 250 ft. The cost of its construction is estimated at £14,000. The contractors are Messrs. William Conolly & Son, Dublin.

Wall Paper Co.—The National Wall Paper Company of the United States, capitalised at \$8,000,000 dollars (about £7,600,000), is about to be dissolved by the unanimous consent of the stockholders. The "combine" was formed in 1892 by the absorption of twenty-four separate companies. Outside competition, and the demands of the trade for goods identified with individual manufacturers, forced the abandonment of the combination.

Examination.—The Civil Service Commissioners give notice that an open competitive examination for the situation of surveyor and draughtsman in the Irish Land Commission will be held in Dublin, commencing on the 22nd January, 1901 under the regulations dated the 13th February, 1900. The number of situations to be filled will be the number vacant at the time of the examination. No person will be admitted to the examination from whom the Secretary of the Civil Service Commission has not received, on or before the 9th January 1901, an application in the candidate's own handwriting, on a prescribed form, which may be obtained from the Secretary at once.

The Quarries of the United Kingdom.—The report for 1899, issued by the Home Office, states that the total number of persons employed in the quarries under the Quarries Act in the United Kingdom and the Isle of Man during the year 1899 was 97,995. Of this total 64,159, including 12 females, worked inside the actual pits, holes, or excavations; whilst 33,836 including 120 females, were employed at factories and workshops outside. Compared with 1898, the number of persons employed inside quarries shows an increase of 1,407, and the number outside quarries a decrease of 37,890 persons; but it is important to point out that this decrease is apparent not real. It is due to the transfer of the duty of inspecting the works for making bricks, tiles, and Portland cement, situated outside the quarries, from the Mines Branch of the Home Office to the Factory Branch. The returns which have been received

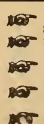
under the Quarries Act, 1894, since that Act came into force, have given the following totals of persons employed inside:—1895, 53,915; 1896, 56,123; 1897, 58,845; 1898, 62,752; 1899, 64,159. The increase observable here is probably not wholly real; in part it is no doubt due to more complete notification by owners of quarries, as the Act gradually became more widely known. In 1899, 1,032 separate fatal accidents occurred in and about the mines and quarries of the United Kingdom, causing the loss of 1,089 lives. Compared with the previous year, there is an increase of 42 in the number of fatal accidents and an increase of 14 in the number of lives lost. Of the 1,032 separate fatal accidents, 915 causing the loss of 972 lives happened at mines, and 117 causing the loss of 117 lives happened at quarries.

The Workmen's Compensation Act Again.—The House of Lords has again reversed the Court of Appeal, which decided that where a workman had not been two weeks in an employer's service he could recover nothing, because, since compensation was to be calculated on the average weekly earnings, there was no average, and so no right to compensation. But the Lord Chancellor pointed out that by the Act the workman was granted compensation, and that the rule as to the average earnings was only one means of assessment, and that, therefore, where this means was inapplicable, another must be employed. Often no one can guess what was intended by the unintelligible language of this statute, but there can be no doubt that the House of Lords is acting on the best principle of construction. To limit the right of compensation by a narrow construction is unfair to the workmen who are affected by it, because there can be no question that the main exception to compensation was only to be when a workman had been guilty of gross and wilful negligence. The recent decision of the House of Lords have thus all tended in the same direction, namely, to give the workman the right to compensation except when he has been grossly and wilfully negligent. The petty refinements of the Court of Appeal have been swept away. The spirit of liberality must necessarily affect the future construction of this Act.—*Builder.*

There has just been erected in the Unitarian Church, Blackwater-street, Rochdale, a carved oak organ screen, one of the many gifts of Mr. Robert Taylor Heape to the church. It is a particularly fine piece of work. In keeping with other similar gifts, it has been designed in the Perpendicular style of Gothic art, and is what is known as a part-closed screen. The lower parts are raised and ornamented with "linen panels," the moulds and general arrangement of the wood taking the form of gracefully folded drapery. The transom line is richly carved, and rising from this are four bays pierced in their lower parts and above having ogee and crocketed heads. Still higher is much gracefully lined, flowing tracery. The whole is surmounted by an effectively carved and embattled cornice, underneath which, in unobtrusive lettering, is the inscription, "The gift of Robert Taylor Heape, 1900."

This screen, like the font cover, the carved screen in the vestibule, etc., was designed by Messrs. Butterworth and Duncan, and has been carried out by Messrs. Harry Hems and Sons' of Exeter, who have long had an international reputation as ecclesiastical sculptors and craftsmen.

The ancient Parish Church of St. Gregory, Dorsetshire, which is said by architectural experts to be apparently of late 14th century construction, was re-opened after some useful work of renovation, the day being, according to one old English calendar, the Feast of St. Eilfreda, the Virgin. It may be remarked that ancient churches dedicated to the honour of St. Gregory the Great are not very common in England. Pope Gregory died very early in the 7th century, and it was he who, ere he went hence, invented the well-known Gregorian music; himself training the choristers in its use. He was also the first to introduce the celibacy of the clergy, a custom which priests of the Romish Church are credited to have kept to this day. There are exactly 25 old churches in England consecrated to his honour. Frithelstoke, in North Devon, is another built to the honour of S.S. Mary and Gregory conjointly. The works

 The "Irish Builder," (the Wood Printing Works, 13 Fleet Street, Dublin), since its change of management, has made a tone, smaller blocks also appearing in the body of the paper; and these are well worthy of study by those outside the architectural profession. Some articles (now running) on "Classic Details" and their illustrations would greatly delight the lover of art—whether it be in stone or the creations of the brush—if only aware of the existence of this well-produced fortnightly.—*The Printer's Engineer.*

that have now practically come to so successful a completion consist of the substitution of an open timbered roof with crisply carved wood bosses at the various intersections in place of the lath and plaster ceiling, whilst the walls throughout have been thoroughly overhauled and ornamented by colour. There are new clergy prayer desks of oak, and a beautiful new pulpit of carved oak has been set up on the north side. This has been carried out by Messrs. Harry Hems & Sons, the well-known church furnishers, of Exeter, who are also making the new font which is not yet fixed. The bowl of this font is of Beer stone, and will be carved upon each of its eight faces, and it will, when complete, stand upon alabaster columns resting upon a double row of octagonal steps, upon which is inscribed:—"To the Glory of God and Thanksgiving for their Baptism into His Holy Church this font is placed here by the Parochial Guild of Church Workers, A.D., 1900." The architect under whom the whole of the works have been carried out is Mr. Strawbridge, of Taunton.

The new Council Chamber, Blackpool.—On the 10th of last month at Blackpool, the new Council Chamber, Mayor's Parlour and Ante-Room were opened by the new Mayor, Mr. Alderman Smith, Builder, of Blackpool. The walls of all rooms are panelled with Oak to a height of 8ft. 6 ins., the Oak being finely figured left straight from the plane and the upper panels carved with various Elizabethan Strap Work designs, the Cornice is enriched with large Egg and Tongue moulding; above this the walls are treated with large Oak Pilasters under each beam. A special feature in the room is the Public Gallery which is recessed into the wall, and approached by a half-circular Oak Staircase with twisted balusters, and the newel mounted with a finely modelled Griffin, in front of the balcony between the large Oak columns which extend from the floor to the ceiling are filled with a balustrade of large pierced, modelled and carved panels. The whole of the Seating and Desks are of Oak, slightly fumed and wax polished and upholstered in Scarlet Morocco, with the Arms of the Borough embossed on the back in gold; a special feature with the Councillors' seats is that they are made to tip up in the same way as a Theatre Seat, so that when any of these gentlemen are speaking they are not inconvenienced by the seat.

The Fittings in the Mayor's Parlour and Ante-Room are also of Oak, slightly fumed and wax polished and upholstered in an old Gold Velvet. We would also point out in the New Municipal Buildings, that the corner facing the Pier (Ground Floor) under the Mayor's Parlour has been let to the Manchester and Salford Banking Company, Ltd., and the Fittings here, which are also of Oak, fumed and polished and the walls panelled, have been executed by us; both these jobs were under Messrs. Potts, Son and Hennings, Architects, 9 Ely Place, London, E.C. The New Buildings opposite the Town Hall, that is the extension of the Manchester and County Banking Hall, which is a fine, lofty, one-storey building, has been very elaborately fitted in rich old St Domingo Mahogany from the designs of Messrs. Mills and Murgatroyd, Architects, Strutt Street, Manchester.

IRISH LAND COMMISSION.

SURVEYOR AND DRAUGHTSMAN (21-28).

FORTHCOMING EXAMINATION, 9th JANUARY.

THE date specified is the latest at which Applications can be received. They must be made on Forms to be obtained with particulars, from

THE SECRETARY,
Civil Service Commission, London, S.W.

"The Belfast Critic."

The Christmas number of this bright little paper, the quondam "Magpie," reaches us, and certainly it is a most creditable production and a fine big three pennyworth. Full of interesting short stories and articles by clever and brilliant writers, the series of portraits of "brave men and fair women" make a pretty memento of the Christmas of 1900.

TO CONTRACTORS.

HOUSING OF THE WORKING CLASSES ACT, 1890.

URBAN DISTRICT OF KILLARNEY, COUNTY OF KERRY.

NOTICE is hereby given that the Killarney Urban District Council are prepared to receive Tenders for the construction of the

MAIN DRAINAGE,

in connection with the proposed Scheme of Artizans' Dwellings according to Plan and Specification to be seen at the office of the Council.

The declared Contractor will be required within ten days from the acceptance of his Tender, to enter into a Bond with two solvent Sureties in a sum to be settled by the Council, for the due performance of the Contract; said Bond to be prepared by the Law Agent of the Council at the Contractor's expense.

Sealed Tenders, containing the names of such sureties, must be delivered to the undersigned before 12 o'clock, (noon) on Monday, the 7th day of January, 1901.

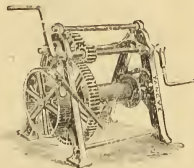
An agreement of form of Contract shall also be signed by the Contractor and the Council at the same time as the Bond; said agreement to provide for such matters as are not specifically provided for in the Specification, e.g. Date of commencement and of completion of contract work, extension of time, method of payment, &c.; such agreement or form of contract to be prepared at the Contractor's expense by the Law Agent of the Council.

The lowest or any Tender not necessarily accepted.

Signed this 21st day of December 1900.

MICHAEL HEALY, Clerk of the Council.

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157 STRAND, LONDON

APPOINTMENTS.

Appointment.	For whom	Particulars from.	Last date.
Consulting Architect and Advisor to Indian Government	Indian Government	The President Royal Institute of British Architects, Conduit Street, London.	—
Architect	Lisnaskea R.D.C.	Mr. J. O'R. Hoey, Clerk, Board-room, Lisnaskea ..	January 5th

CONTRACTS.

Work.	For whom.	Particulars from.	Last date.
Pump, Stratford-on-Slany	Ballinglasy R.D.C.	Mr. J. R. Darg, Clerk of the R.D.C.	January 5th
Electric Plant	Rathmines U.D.C.	Mr. F. P. Fawcett, Clerk, Town Hall, Rathmines ..	January 10th
Sewerage, Larne	Larne U.D.C.	Mr. W. G. Young, Clerk, Town Hall, Larne ..	January 6th
Painting and Repairs, Larne	Larne U.D.C.	Mr. W. G. Young, Clerk, Town Hall, Larne ..	January 6th
Second-hand 10-ton Steam Crane, Belfast	Belfast Harbour Board	Mr. W. A. Carris, Harbour Office	January 7th
Broken Whinstone, etc., Kingstown	Kingstown U.D.C.	Mr. J. Donnelly, Clerk, Town Hall, Kingstown ..	January 7th

TENDERS.

BELFAST.—Decoration at the Municipal Buildings, Belfast:—G. Morrow & Son, Clifton Street (accepted).

CELBRIDGE.—For erection and fitting of a surgical operation-room, attached to the Celbridge workhouse infirmary:—W. Fennel, Celbridge (accepted), £269.

DERRY.—Four residences at Buncrana, Londonderry. Mr. R. Eccles Buchanan, Architect, Castle Street, Londonderry:—J. Shannon, £3,427; R. Colbourn, £3,057; T. A. Colbourn, £2,638; H. Campbell, Buncrana (accepted), £2,458.

DUNDALK.—For additions, &c., to old grammar school buildings and conversion into free library. Mr. Wm. Beck, Dundalk, Architect:—McAdoey, £1,198; Wynne, £1,193; Parks, £1,171 18s. 10d.; McGuinness, Dundalk, £1,041 18s. 6d. (accepted).

KILKENNY.—For supplying a cooking range in the workhouse kitchen, and carrying out other structural alterations:—J. P. Sherin (accepted), £14 10s.

LETTERKENNY.—For erection of five working-class lodging-houses, at Ramelton road, Letterkenny. Mr. M. O'Callaghan, Architect. Quantities by same:—W. Wilson, £388 18s. 6d.; W. Platt, £369 15s.; D. McCaffrey, £250; R. Kennedy, Letterkenny (accepted), £247 10s. 6d.

MULROY CO. DONEGAL.—Shop at Leathlagh, Mulroy, Co. Donegal:—J. Griffin, Shedah, Tannery, Letterkenny (accepted), £39.

NAVAN.—For alterations to premises. Ludlow street. Navan, for Mr. J. Davis, C.P.C., Mr. S. Lowe, Architect, Navan,—James Grace, £95; Charles Pigott, £39; Joseph Navagh, £36; Nicholas Delaney, £60.

NAVAN.—For addition to Farmhouse at Dennhill. Navan, for Mr. William Carpenter. Mr. S. Lowe, Architect, Navan,—James Grace (accepted), £150; Rubble stone and ironmongery supplied by employer.

The Climax Ventilating and Heating Co., Ltd., 41 Port Dundas Road, Glasgow, are carrying out the ventilation of the North Merchiston United Free Church, Edinburgh, by means of their "Cousland's Improved Climax" direct-acting Invisible Roof Ventilator, of which they are the sole manufacturers.

Messrs. Francis and Co., Ltd., the well-known Portland Cement Manufacturers, notify us that their business has now been taken over by The Associated Portland Cement Manufacturers, Limited.

The House of Recovery, Carlisle, is being warmed and ventilated by means of Shorland's patent Manchester Stoves with descending Smoke Flues, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The New Pavilion at Messrs. Smedley's Hydropathic Co., Ltd., has been completed and opened. The Spring Dancing Floor is arranged upon Messrs. Goodall, Lamb and Heighway, Ltd.'s Special Carriage Spring System and laid with Ornamental Oak, Walnut and Mahogany English made Parquet, specially designed and manufactured for Messrs. Smedley's Hydropathic Co., Limited, by Messrs. Goodall, Lamb and Heighway, Limited, of Manchester, who have laid most of the large dancing floors in this country.

Good colourless varnish can be made from Canada balsam, one ounce; spirits of turpentine, two ounces; mix them together. Before this varnish is applied, the print or canvas should be sized with a solution of isinglass in water. When dry, apply the varnish with a camel's hair brush.

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Branch of the Leeds Fire Clay Co., Ltd.,

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[S.E.]

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The Irish Builder

A JOURNAL DEVOTED TO

ARCHITECTURE, * ARCHÆOLOGY, ENGINEERING, * SANITATION,

ARTS AND HANDICRAFTS.

Every Second Wednesday.

[Estab. Jan. 1859.]

No. 984—Vol. XLIII.

HEAD OFFICE:

JANUARY 16, 1901.

11 LOWER SACKVILLE ST.,
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

We are told that a company has been organized to reconstruct the old Earl-fort skating rink, Dublin. The scheme is a taking one, and should prove a big success, because Dublin badly needs a building adapted to the purposes of up-to-date assembly rooms. The new premises will comprise rink, gymnasium, dining hall, winter garden, ballroom, and large concert hall.

The architect is Mr. T. E. Hudman, M.R.I.A.I.

We hear that important changes for the better may shortly be looked for by the Civil Staff of the R.E., who have long been dissatisfied with their status and prospects.

The competition of unqualified persons competing for architects' work under the Labourers' Acts is beginning to be very severely felt by country practitioners, and young architects in particular. The gentry to whom we refer will simply work for anything the councils choose to give them. 30s. and 35s. per cottage for all the architectural and engineering work in connection with a Labourers' Act scheme is common enough. No traveling or hotel expenses allowed. When will architects combine and demand a proper system of registration?

His Excellency the Lord Lieutenant distributed the prizes to the pupils of the Metropolitan School of Art the other day, and delivered a very happy and practical speech. Lord Cadogan advocated the teaching of many art subjects other than mere drawing or the designing of lace patterns. The only fault we ever had to find with the School of Art was its narrowness of scope, and not even the possession of an ideal master in the person of Mr. James Brennan compensated for that.

By the way, the school is now removed from the depressing management of South Kensington, and is under the control of the Department of Technical Education—a happy augury for a useful future.

The Architectural Association had a very interesting discussion the other evening, the subject being "Is the present system of training the best?" Mr. M. J. Tighe, in the affirmative, and Mr. F. Hicks, in the negative, spoke well. The general view seemed to be unanimous that some form of apprenticeship, together with exterior, general and technical education, was the very best thing that could be devised. No one advocated the methods of the French *Ecole des beaux Arts* as a substitute for apprenticeship.

The Board of Works have under consideration the question of improved methods and better grants in aid of new national school buildings in Ireland. Compared with English and Scottish school board ratings for building purposes, the present Treasury grant is ridiculously inadequate.

Architects are much handicapped in planning Irish schools, by reason of the parsimony of the Treasury, as well as by the absurdly antiquated prejudices of their employers in favour of obsolete types of schools.

An architect, practising in England, in a recent private letter to a leading Dublin architect, makes the following caustic remarks:—"You will not be surprised to hear that a really good hospital has been erected here, or partly erected, and at the opening ceremony due compliments were

given to all concerned, including the secretary, who invented an ingenious bed-chair, and the builder was presented with a clock; the chairman of the committee presented a gold key to the lady who opened the door. The half column in the London papers described minutely the admirable plan, and, of course, the beneficent donations—but never a word as to who the architect was!" Well, the writer of the letter remarks, "Virtue is its own reward." Let us hope the architect himself derived due consolation from the truth of that comforting, if somewhat Spartan, remark; but, seriously, the extent to which this ignoring of the architect is carried is a sore grievance with "the profession." We suspect architects are themselves much to blame, for, alas! it must be admitted, they sometimes make themselves too cheap.

The memorial portrait to the late Professor Cumming, M.D., of Belfast, painted to the order of his friends and colleagues, was unveiled a few days since in the Examination Hall of the Queen's College, Belfast, by Mrs. Pirrie, his intimate friend and patient.

Our readers will recollect that we published in January, 1900, a most interesting interview, which our own correspondent had with the late Dr. Cumming, on the subject of the new general hospital.

Our contemporary, "The Medical Press," in reply to a correspondent, remarks:—"The Workman's Compensation Act has undoubtedly led, in some degree, to malingering among workmen who see an opportunity for being compensated by a lump sum." All said and done, we don't think that there is much of that kind of thing on this side of the water—we're not up-to-date enough.

Senator Proctor, of Vermont, U.S.A., is credited with a project to "corner" the Carrara marble quarries in Italy, and, it is stated, considers a sum of two million sterling expended in that (to him) desirable result would effect the desired end.

Senator Proctor is the head of a "ring" which has already cornered the whole of the New England granite quarries, so he is no novice at the game.

The "cornering" of the Carrara or statuary marble market would possess a peculiar interest for Ireland, because Carrara marble is traditionally the favourite material for the immense quantity of elaborate altar work executed in the Roman Catholic churches of Ireland since the Gothic revival stimulated the Catholic clergy to embark on a course of church building which still continues on an immense scale.

Scarcity of Carrara would, from an æsthetic point of view, be not altogether undesirable, for its preponderating evidence in churches has become monotonous to the last degree.

It is curious to note the increase in that modern tendency "to corner," a prevalence that threatens to introduce a new verb to the dictionary. In these days men see no harm in "cornering" even such a staple article of necessity as wheat—a propensity which in the days of "Good Queen Bess" would have probably entailed the loss of his right hand to the ingenious engineer who sought to "engross" the food of the people.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.

ORDINARY MEETINGS,
Grosvenor Hotel, 7.45 p.m., Sharp.
TUESDAY, JANUARY 22nd.
"Two Mount St. Michael's; Irish and Norman,"
Mr. P. J. O'REILLY.

CLASS MEETINGS,
22 CLARE STREET. 8 p.m.

DESIGNING CLUB.

Date.
FRIDAY, JANUARY 25th. Subject to be announced.
CLASS OF DESIGN.

Subject. Lecturers.
THURSDAY, JANUARY 17th. A Village Church, Mr. R. M. BUTLER.
" " 31st. Design for a Font, Mr. E. BRADBURY.

ARCHITECTURAL HISTORY CLASS.

MONDAY, JANUARY 22nd. Early English Period, Mr. R. M. BUTLER.
" " 28th. Decorated Period, Mr. E. BRADBURY.

BUILDING CONSTRUCTION CLASS.

THURSDAY, JANUARY 24th. Criticisms of Drawings, Mr. C. P. SHERIDAN.

TECHNICAL DEMONSTRATIONS.

FRIDAY, JANUARY 18th, 4.30 p.m., at Messrs. George Rowe and Co., 22 Moss Street :
Limes and Plaster, Mr. MALCOM.
FRIDAY, JANUARY 25th, 4.30 p.m., at Mr. William Baird's, 12 Lower Abbey Street :

Sanitary Plumbing, Mr. THOS. BAIRD.

A capital discussion meeting took place on 8th inst. The subject set down for debate being "That the present system of apprenticeship is best suited for the training of an architect" Mr. M. J. Tighe opened in the affirmative, and Mr. F. G. Hicks spoke in the negative. The views elicited were interesting and instructive. No speaker ventured to advocate the abolition of apprenticeship, but most appeared to regard the masters as wanting in concern for their pupils' futures. Mr. Tighe dwelt upon the unpractical results of the French system in the *Ecole des beaux Arts*, which turned out not practical architects, but designers whose conceptions never saw realisation.

Messrs. T. E. Herdman, Joseph Geoghegan, Scott, Ward, Allberry, and Butler took part in the discussion.

The Chairman, Mr. Walter G. Dobbin, M.A., summed up.

Students are requested to note the change of date for the next meeting of the Architectural History Class. The class will meet on Monday, 22nd inst. The period will be "Early English," illustrated by lantern views.

—:o:—

MASTER BUILDERS' ASSOCIATION.

The annual general meeting of the Master Builders' Association was held on Thursday evening at the Grosvenor Hotel, Westland row, when the following officers were elected for the ensuing year:—President, James Beckett; hon. secretary, John Good, 55 Great Brunswick street; hon. treasurer, James Kiernan; committee, R. Denne Bolton, Thomas Connolly, Richard Collen, Thomas Mackey, Wm. Meade, James Martin, Henry Pemberton, Kevin Toole, B. W. Whyte. The following resolution was adopted:—"That, having heard with great regret of the death of R. F. Lidwill, Esq., J.P., an old and valued member of this association, we desire to convey to Mrs. Lidwill our sincere and deep sympathy with her in her bereavement."

"The Irish Builder,"

IMPORTANT NOTICE.

In order to still further increase the popularity of this old-established periodical, the proprietors have decided to reduce the price from three pence to one penny per copy. Subscribers* who have paid in advance at the old rates will be given full credit for their payments. THE IRISH BUILDER will also in future be published fortnightly on every alternate Wednesday, instead of bi-monthly as heretofore.

Our readers can assist us materially by introducing the paper to other likely subscribers. Prepaid rate (including postage), 4s. per an.

BELFAST ASSEMBLY HALL COMPETITION.

ACTION OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The Secretary has addressed the following communication to Sir Thomas Drew, P.R.H.A., which he has kindly permitted us to give publicity to:—

Royal Institute of British Architects,
9 Conduit-street, London, W.

BELFAST PRESBYTERIAN ASSEMBLY HALL.

DEAR SIR,—I am directed by the Council to enclose you a copy of a letter they have addressed to the Presbyterian Assembly at Belfast.—Yours faithfully,

(Signed), W. J. LOCKE, Secretary.

To Sir Thomas Drew, P.R.H.A.

"9 Conduit-street, London, W.

"BELFAST PRESBYTERIAN ASSEMBLY HALL.

"DEAR SIR,—The Council of the Royal Institute have had their attention directed to the competition for the proposed new Presbyterian Assembly Hall, Belfast, and have carefully considered the whole question. In view of the unsatisfactory termination of this competition, and especially in view of the appointment as architect for this building of the firm responsible for the original objectionable conditions, the Council are of opinion that the only proper course to have been adopted was either to have appointed Mr. Rupert Savage as architect in conjunction with a consulting architect, as suggested by himself, or to have inaugurated a new competition with conditions drawn up by an experienced assessor.

"My Council hope that the Assembly's Committee may yet see their way to adopt one of these courses.—Yours faithfully.

"(Signed), W. J. LOCKE, Secretary."

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

A meeting of the Royal Institute of the Architects of Ireland was held on Monday week, when the following resolution was carried unanimously:—"The Council of the Royal Institute of the Architects of Ireland having had the result of the Presbyterian Assembly Hall competition (Belfast) brought before them, are of opinion that the conduct of the competition committee in not following the usual and proper course of publishing the report of their assessor (which they understand was an open document), and in appointing as architects to the new building the firm who drew up the original very unsatisfactory conditions is deserving of their condemnation as being absolutely opposed to the methods which should govern all fair and impartially conducted competitions. The Council consider the proper course for the committee to have adopted was either to have given the work to the gentleman placed first by the assessor, in conjunction with a consulting architect of experience, or else to have invited a fresh competition with more satisfactory conditions than the previous one."

—:o:—

Mr. Richard William Binns, who died a few days ago in Worcester in his 81st year, was a remarkable example of an energetic man who pursued a career under great difficulties. He was a native of Dublin, and was trained to be an engineer. In the early days of the Science and Art Department he succeeded in obtaining a mastership in the Training School. He taught geometrical drawing, which was then supposed to be the basis of all art. The treatises he published on the subject were for many years utilised by the students. Mr. Binns and some of the masters on one occasion had a day's excursion in the country. He wished to show his agility by jumping over a stick. He succeeded, but somehow broke his leg, which had to be amputated. Afterwards he resigned his official appointment and joined the porcelain works at Worcester. There he was able to turn his knowledge of industrial art to account, and it was not long before the reputation of the works was raised to a higher level than formerly.

CONTENTS.

	PAGE
Topical Touches	594
The Architectural Association of Ireland	595
Belfast Assembly H II Competition—	
Royal Institute of British Architects	595
Royal Institute of the Architects of Ireland	595
Comments	596
Our Cork Letter	598
Notices	598
Building News	599

Engineering News	602
Specification—Alexandra Nurses' Home (continued)	603
Correspondence—	
"Does 'Indigenous' Irish Art Exist?"	604
South Dublin Rural District Council—Appointment of Engineer	604
Appointment of Superintendent of Works, Belfast	605
Our Illustrations	605
Contracts, Tenders	viii.

COMMENTS.

The Question of "Prime Costs."

Here in Dublin, and in Ireland generally, the relations of builder, architect, and surveyor have ever been remarkable for the pleasantly harmonious feeling which in ninety-nine cases out of a hundred pervades their mutual relationship. We have in Dublin fewer unscrupulous architects, doubtful builders, and dishonest, exacting employers, probably, than any other city of its size. Why this is so we need not pry into; long may it remain so, say we. Envious critics may tell us that such a semi-Arcadian state of things is due to the constitutional inaptitude of the Irishman for purely commercial methods of reasoning. But yet contentious little questions do occasionally arise, and one of the most vexatious of these is the oft-debated subject of "Prime costs."

"Prime costs" are defined in the standard "General Conditions of Contract" of the Royal Institute of the Architects of Ireland to be the actual nett cost price of an article, and a price not subject to any deduction whatsoever. Now, no one can quarrel with such a definition; it is terse and to the point; yet every architect knows that when he gets a price for a given article from a manufacturer, that price, even though called "nett," almost invariably covers a commission of at least ten per cent. for the builder, and few architects care to deprive him of what he looks upon as a perfectly legitimate source of profit. We know an instance of an architect—a very able man in his profession—who, in an exceedingly large contract, demanded all the receipted vouchers, and wherever he could trace cash or other discount on the face of the voucher he debited the builder—and we also know that it was resented. Yet the architect stuck to his guns, and, of course, carried the day, because under the terms of the contract he was acting strictly within his legal rights, and was, in fact, only carrying out his duty towards his employer.

Take such an item as gunbarrel tubing, which occasionally, owing to trade "rings" and "corners," bears a discount of from twenty to eighty, and we believe, even ninety per cent. off list prices. We know a case of a time and materials account in which the full list price for gunbarrel were charged. Would an architect or engineer have been justified in passing such a claim and mauling his client to the extent perhaps of seventy per cent? Common sense says certainly not. Surely this is a question on which some unity of opinion as between the representative Societies of the Architects and the Builders would be desirable. It is always a thankless, and generally a painful, office for an architect to have to cut down the account of the builder who has given him a thoroughly satisfactory job, with a minimum of trouble and worry, yet a duty which may not be shirked. Yet another case is that in which the architect put a clause in his specification something to the effect of, "Provide the sum of £ — to be paid to a special contractor (or to be at the architect's disposal) for heating and ventilation." Now, the literal and legal meaning of that clause is, that the builder must, from the day he signs his contract, hold ever ready in his hand, as it were, the specified sum, and be prepared at a moment's notice to hand it to the architect, or pay it over to his nominee, the heating and ventilating engineer. Now, what follows? Either the architect does not too closely exact his clients' legal rights, and, having determined on a heating engineer, permits the builder to arrive at an understanding with the engineer as to a suitable commission or discount; or, on the other hand, he takes the arrangement of all the financial details on himself, gets an estimate marked literally and truly "nett," and, in due course, demands

payment for his nominee at the hands of the contractor, who occasionally feels injured and wronged, and, perhaps, becomes refractory. Which is the right course for the architect to pursue? Certainly the latter ensures the client getting the full value of his money; but it is somewhat of a hardship to call upon the builder to pay over without prospect of profit to himself a large sum in cash at a moment when, perhaps, thousands of pounds of his capital are sunk in the building. Would it not be a fairer and easier way for builders to determine among themselves that in every instance when pricing their bill of quantities in competition, they will consider the prime costs taken as absolutely nett, and invariably add thereto such a margin as will yield them a fair profit for the use of their money—for, in the disbursement of prime costs, they are literally the clients' bankers, and are providing him with a financial accommodation, for which they are entitled to ask a reasonable consideration: only it is but fitting that how that consideration shall be given is clearly understood by all parties.

The Salaries of the County Surveyors.

Here is the surveyor's question as thrashed out by the last meeting of the Westmeath County Council. But it is not the same with the other Councils. The question of the payment of the salary of Mr. A. E. Joyce, county surveyor, came before the Westmeath Council Committee. The amount for the quarter was £159 7s. 10d., and he had also applied for £62 10s., arrears deferred. Mr. Joyce said the Council deferred payment of his salary as fixed by the Local Government Board until the cases from other counties which were coming before the Appeal Court were decided. The decision was given on the previous Saturday, and the ruling of the Local Government Board in fixing officials' salaries was upheld. Officials from other counties had gone into the courts, but he had not, and did not put the Council to any expense as was done in other counties. He might have gone to the Court of Appeal, but he saved the Council that much expense. Mr. Downes—Do you insist on having the whole of the salary fixed by the Local Government Board? Mr. Joyce—It is the amount fixed by your committee, who recommended that it be £550 a year. They did that after hearing my statement. The Council who did not hear any statement from me simply passed a resolution reducing the amount to £500. I am asking the amount fixed by the committee, and will continue to ask for it. Mr. Smith—The question between us is £50 a year, Mr. Joyce—Yes; £500 or £550. He would remind the Council when the matter was before them that the Chairman, who was Mr. King, said that they would not make the salary of the county surveyor less than that of the county surveyor in any other county. On inquiring into the salaries fixed he found that Westmeath, in comparison with the mileage of roads, is fixed the lowest in Ireland. Mr. Flynn was in favour of paying Mr. Joyce at the higher amount, as he treated the Council very honourably and kindly. Mr. Mason said the decision given on *certiorari* was binding, and the question could not be taken further. It was then decided to pay Mr. Joyce at the rate of £550 a year, as recommended by the committee, and to pay the assistant surveyors on the same basis.

The Workmen's Compensation Act.

The latest legal puzzle arising out of the interpretation of the Workmen's Compensation Act is one which, to the lay mind at any rate, presents few, if any, of the characteristics of a puzzle at all. The Act, among other things, lays down that employers are liable to pay compensation for injuries sustained by workmen engaged in the "repair or construction" of a building. Some time since a workman, while engaged in fixing on iron stays on the ground floor of a building which had been

in use for some time, in order to stiffen or strengthen it, fell from the scaffolding, sustaining injuries from the effects of which he succumbed. His widow brought an action against the employer for compensation, to which the defence was that the workman had been engaged neither in the "repair" nor "construction," but in the "alteration" of the building, and his case did not, therefore, come within the purview of the Act. The Court rejected this view, awarding £245 compensation, whereupon the case was carried to the Court of Appeal, which accepted the defence put forward, and reversed the decision. The House of Lords had its say, and by a majority of one reversed the judgment of the Court of Appeal, thus sustaining the decision in favour of the widow's claim originally given by the County Court Judge. The majority of the Law Lords justified their reversal of the judgment of the Appeal Court on the ground that there was no room for a third term such as that of "alteration in the construction of a building." The addition of new stays, it was held, was construction, and thus the case came within the purview of the Act. The judgment of the House of Lords is one which, while probably in accordance with the intention of the Act, also commends itself to commonsense. The case shows to what a degree mere formalism and slavery to words prevail in the proceedings of the Courts.

The South Dublin Clerks' Ships.

The South Dublin Rural District Council have unanimously appointed Mr. Thomas Byrne, A.R.I.B.A., Architect, to the office of Clerk of the District Council and Engineer and Architect to the same body. But the Board of Guardians have very wisely determined to keep separate the office of Clerk of the Union and Clerk of the Council, and have accordingly appointed another gentleman to that office, recognising the impossibility of one official discharging such a combination of duties.

The District Council are to be congratulated upon having secured the services of such an able and promising young official as Mr. Byrne, who brings to the discharge of his duties a very varied and extended experience gained in the Works Department of the London County Council. Mr Byrne has likewise had a considerable insight into the working of the Local Administrative Acts in this country, and is by examination a member of the Royal Institute of British Architects, and also of the Architectural Association of Ireland.

The Society of Architects.

It is stated that the Council have proposed to appoint Mr. Anthony Scott, M.S.A., Architect, Drogheda, to be Honorary Corresponding Secretary for Ireland.

The Plumbers' Strike in Dublin.

The strike in the plumbing trade shows no sign of abatement, and is causing much inconvenience in the city. Both masters and men appear to be standing exceedingly firm. It is rumoured that representatives of the masters have visited the other side of the water with a view to arranging for the importation of plumbers. The strike has now lasted eight weeks.

The Dublin Corporation Housing Scheme.

We understand that Messrs. W. Kaye Parry and Ross have been appointed the architects for the big Bride's-alley Housing scheme, the inception of which is due to the philanthropy of Lord Iveagh. The Corporation have another big scheme on the stocks for the north side of the city.

A Big Educational Scheme.

The Nuns of Cloysoft Convent, Blackrock, are about embarking on a large undertaking of bricks and mortar in the shape of new schools and additions to the convent, the total cost of which is expected to reach over £28,000. Mr. George L. O'Connor is the architect.

Notable Houses in Dawson-street.

There appears to be no indication of an early start being made with the re-building of the premises so long known as Morrison's Hotel, at the corner of Nassau and Dawson-streets, bought some months ago by the North British Assurance Company for their new Dublin offices. The architect for the new building is Mr. W. Washington Browne, of Edinburgh. The old house was a well-known feature of Dublin for many years, and was associated with several notabilities. Here the late Charles Stewart Parnell was arrested prior to the State trials of 1882. Another house in the same street, of still older traditions, is No. 12, now let in

offices. It was formerly known as "Macken's Hotel"—a favourite hostelry in by-gone years, much patronised by the country gentry. It was lodged, awaiting their removal to England, the officers of General Humbert's force captured by the British after the landing in Killala Bay.

The Late Alderman Meade's Property.

We understand that the extensive Dublin house property of the late Alderman Meade, P.C., recently sold by auction in Mr. James H. North's salerooms, realised very good prices. The total amounted to over 41,000.

Architectural Deputation from Belfast.

As a result of the recent meeting of Belfast architects, a small deputation, which included Messrs. W. J. Gilliland and J. H. Dewhurst, attended last week in Dublin, for the purpose of conferring with the Council of the Royal Institute of Architects, Ireland, with a view to the establishment of a branch of the Institute in Belfast. We understand that the result of the interview was most satisfactory. The object of the movement is to create a better sentiment of professional brotherhood and a higher standard of professional etiquette. Indeed it is remarkable that the Belfast architects have not earlier banded together for the protection of their interests. The standard of practice in Belfast is a very low one, of which undercutting in fees is but one feature. The depredations of the practitioner who works for one, two, and three per cent. have absolutely demoralised that keenly commercial community of the Northern capital, so much so that few men can obtain the legitimate five per cent—a bargain for a bulk sum averaging about two or three per cent. being the usual *modus operandi*. It is to be hoped that the branch the Institute once firmly established and numbering amongst its members all the respectable architects of Belfast, such undignified procedure will become a thing of the past; if it is to be put down, however, a firm hand must be used, and active measures taken to educate the public.

Sir William Chambers and Dublin.

In the current number of *A.A. Notes*, the official organ of the London Architectural Association, there is published the first part of a prize essay by Mr. J. MacLaren Ross on "The Life Work, and Influence of Sir William Chambers." The essay is a clever and scholarly one, albeit a trifle pedantic. We congratulate the author on bringing such research and industry to illuminate his text. Sir William Chambers was the greatest architect of the latter half of the 18th century English renaissance, and stands out a giant amongst all his fellows—remarkable for his influence in promoting a pure and beautiful native rendering of the Italian renaissance. Solidity with elegance of detail and a fine perception of grouping and massing, are the characteristics of his work. To Londoners and men generally, his greatest claim to fame rests on his design of Somerset House, the beautiful river front of which is, to our mind, amongst the finest of modern buildings. His early acquaintance, made as a student in Rome, and subsequent life-long friendship with the famous Earl of Charlemont, the Commandant of the Irish Volunteers, introduced his work to Dublin. It is said, with what truth we know not, that Chambers never actually set foot in Ireland, but that as it may, we have amongst the finest of our public buildings examples of his genius which have borne their share in creating an almost unique style of Dublin architecture. Chief of these are the College Green front of Trinity College and the Provost's house, while Charlemont House and the Casino at Marino, Clontarf, were for his early patron, Lord Charlemont. The Casino has been more than once illustrated by us. We regret to say that this charming little building, full of interest and beauty, is not in a good state of repair—in fact if measures be not promptly taken it will soon be irreparably damaged. May we venture to express the hope that the public spirit of the Christian Brothers (the present owners of "Marino") will induce them to preserve to us so valuable a memorial of a great Irishman and a great architect. Charlemont House, now the office of the Registrar General, was notable for the exquisite delicacy of the internal ornament and detail. The fine plaster ceilings of this lordly mansion are still there, but the more portable fittings, the sculptured marble mantelpieces and the like, have, during recent years, been to a great extent removed.

OUR CORK LETTER.

(FROM OUR OWN CORRESPONDENT.)

Railways and Tramways.

The General Electric Company of Ireland propose to construct a railway from Middleton through Cloyne, terminating at Ballycotton, a total distance of 11½ miles, at an estimated cost of £100,000. It is proposed to work the line by electricity and to erect two power stations, and to make the gauge the same as that of the Great Southern and Western Railway. The Company are applying for a baronial guarantee of 4 per cent. on £50,000. This guarantee the Middleton Rural District Council have refused to give, as they consider that the Government should support the fisheries of Ballycotton rather than that the farmers of the district should be taxed. The Government have already spent £26,000 on Ballycotton Harbour, and there is no doubt, if the railway were constructed, it would help to develop the fishing industry of the district, as then Ballycotton would be connected by rail with Cork.

The Cork Electric Tramways and Lighting Company have had a very successful year. The returns for the tramways for the last twelve months show an increase of £1,652 on the previous year. That is £412 per week as against £280, showing an increase of £32 per week. This represents 396 606 extra passengers for the year, or 1,000 extra per day. This is very good, considering the population of Cork is under 80,000. Now that the extension to Sunday's Well is completed the next twelve months should show a further increase, and when the extension to Blackrock is completed there is no doubt the returns will show still better results.

Waterworks.

In a recent letter reference was made to the progress of the Queenstown Waterworks Tibblestown Scheme; it was also mentioned that the District Council were carrying out the work themselves under the administration of their engineers—this after they had got rid of the contractor who had completed the pipe line. It now appears they are going to advertise for a contractor to complete the work, and are also asking the Local Government Board for an additional loan of £10,000, £6,000 of which is to be applied to the completion of the original scheme, and £4,000 for the Haulbowline extension; in return for this latter expenditure the Council will receive from the Admiralty £300 a year in perpetuity and also get 6d. for every thousand gallons of water supplied to the dockyard. This part of the scheme should give a very satisfactory result from a financial point of view, although the item of maintenance on the pipe line crossing the harbour may be heavy. The engineers pointed out that the extra expenditure on the works at Tibblestown was caused by the rise in the prices of materials and labour since their first estimates were made, and also by the fact that the foundations of the masonry dam had to be taken lower than was first anticipated in order to get a watertight bottom. The amount estimated for the scheme originally was £14,000, and now the total estimated cost of these works, including the Haulbowline extension, will be £24,000.

The Fermoy Rural District Council have applied to the Local Government Board for their sanction to a loan of £1,800 for the purpose of providing waterworks for the village of Glanworth.

General

Under the Labourers' Acts of 1883 and 1885 the loans sanctioned up to last March amounted to £1,992,189; of this sum the province of Munster alone accounted for £1,075,091, that is more than all the other provinces combined. This represents an average annual expenditure of over £63,000, which must be a great stimulus to trade in the outlying districts, as well as greatly improving the health of those districts by the better housing of the labouring class.

It is now eight months since the contract for the New General Post Office has been started, but owing to the difficulties met with in getting in the foundations, the superstructure has not yet been commenced, but when the foundations are completed the work ought to make rapid progress.

The Inland Revenue Department have moved from their old quarters at the Custom House into new offices on the South Mall, which have been fitted up for them by Messrs. J. Delaney and Co., Contractors, under the superintendence of the Board of Works.

The Labourers' Dwellings which the Corporation are at present erecting, are a new departure for Cork, as they are designed on the tenement principle. There are eleven buildings of three storeys each, containing three tenements, or thirty-three dwellings altogether. Each tenement will be provided with separate sanitary accommodation and separate entrances; the floors are constructed of concrete and pitch-pine, carried on rolled steel joists. The work, which is to cost £5,940, is being carried out by Messrs. E. and P. O'Flynn, Contractors, from the designs and under the superintendence of the City Engineer.

The scene of the late fire in Patrick-street has now been cleared of the debris, and the main walls, which were dangerous have been taken down. Messrs. B. J. Aleock's premises were completely destroyed, and Messrs. Lipton's and Messrs. Thompson's premises also suffered.

The total damage to the three buildings would amount to something like £5,000.

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NOTICES.

THE IRISH BUILDER is published twice a Month, on alternate Wednesdays, and may be ordered from any News-agent, or direct from the Offices—11 Lower Sackville Street, Dublin.

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Editorial.

Literary matter and drawings to be addressed to the *Editor*, and must be accompanied by the name and address of the sender, not necessarily for publication, but as a guarantee of good faith. We do not hold ourselves responsible for the opinions of correspondents.

Notes of works (especially contemplated works), contracts reports, &c., are always welcome. Drawings and photographs are particularly acceptable.

Publishing.

All business communications to be addressed to the *Manager*. Advertisements must reach the office two days before the date of publication. The charge for Contracts, Notices, Prospectuses, Competitions, &c., is Sixpence per line. Other advertisement rates can be had on application.

Payments.

Cheques and Postal Orders to be made payable to THE IRISH WHEELMAN Printing Co., Ltd.

Notice.—All communications should be addressed to the Head Offices of THE IRISH BUILDER, 11 Lower Sackville Street, Dublin.



Belfast.—THE NEW CATHEDRAL.—At a meeting of the Belfast Cathedral Board, Sir Thomas Drew's letter, advising on various matters of detail, including his views as to the best mode of heating the building was considered and discussed, and a resolution approving of Messrs. Grundy's hot-air system, as recommended by Sir Thomas, was passed. The Board approved of the suggestion of the Dean of St. Anne's of the desirability of forming a special new century fund to meet the cost of the section of the building now decided on, and the form of the appeal, which will be published in a few days, was settled.

BUILDING DURING 1900.—Go where you will within the Belfast city boundaries, and even some miles beyond (says the *Irish News*), and the contractors may be seen working busily at the task of raising houses and adding to the size of the city. In many instances where a few years back nothing but acres of barren, uncultivated soil existed, streets of comfortable houses are now to be found. Not very long ago quite a craze arose for building. Competition became keen, and the numbers of houses then erected by far exceed the demand, the natural consequence being that hundreds were unoccupied. Then followed, naturally, a slump in the building trade. Building was not paying; consequently work became scarce for the artisan and labourer.

The cloud of depression appears to be clearing off, and during the past year builders have disposed of houses that for years had remained empty.

The houses at present under the control of the Corporation in the city make up the enormous total of 75,000. Since the beginning of last year the improvement committee have had submitted to them an extremely large number of plans for new buildings, and already 1,309 have been approved of. Within the same period 1,079 dwelling-houses have been completed and certified fit for human habitation. The previous year 3,219 new buildings were erected, and in 1898 5,309. Vacant houses have been gradually becoming fewer. Sanitary arrangements are being carefully looked after, and for this purpose seven building inspectors have been appointed by the Corporation, two of whom confine their attention exclusively to the testing and laying of drains and sewers and to plumbing work; while the others make a general inspection which, in the case of new buildings, begins with the laying of foundations and ends with the issuing of a certificate which notifies the owner that the house is complete and fit for habitation. Jerry building is dying out. The average cost of building a common "jerry" house in Belfast is stated by the writer in the *Irish News* to be from £60 or £65 to £70, and new houses have been sold at the low figure of £40. The life of a jerry-built house is from twenty to thirty years, and such houses are let to tenants at 3s. to 3s. 6d. a week. Parlour houses command a weekly rent of from 5s. to 6s. per week, and better-class dwellings can be built for about £125.

There is a considerable falling off in the buildings of kitchen houses, which are almost solely tenanted by the artisan and labouring classes. The commonest class of building, that is, building done for investment, has this year received an impetus, and the same may be said of houses built by the owners for their own habitation. Villas are in much demand, and a large number of plans are under consideration for warehouses and factories. In many parts of the city buildings are now in progress for the latter purposes. Messrs. Dickson and Co. are having completed a building in Queen street; and beyond it, in Brunswick street,

a new warehouse has been completed for Messrs. J. Keown and Co. Palatial buildings are in course of erection for John McCullough in Wellington place; on the site of the Ulster Hall Annex a warehouse is being built for McCrum, Watson, and Co., Ltd., and one for Murphy and Stevenson in Linen Hall street. A rather unusual style of building at the present day is that which is in course of erection for McBride and Co., Bankmore street. It is a handloom weaving factory. Murray and Co. are altering and adding to Boyd's Mill, Sandy Row, so as to convert it into a suitable tobacco factory.

The Scottish Provident Buildings (illustrated by us during last year) impart an air of architectural beauty in Donegal Square West, and the Ocean Accident Company's building in Donegal Square North and East, which, when completed, will reach nine storeys, and be about the highest in Belfast, will advantageously set off that portion of the city.

A record of progress has marked the building of churches and schools throughout Belfast, for all denominations. The church at Ardoyne (Mr. Walter Doolin, M.A., of Dublin, architect), now in progress of erection, the Redemptorist Monastery at Clonard, and the schools adjoining, have been completed. The new training school for girls on the Falls road, near Broadway, have also just been completed, the architect being Messrs. E. and J. Byrne, and the contractor Mr. John Fegan. On the New Lodge road the schools recently erected have effected a great improvement in the general appearance of the locality. Mr. J. J. McDonnell is also engaged in the architectural work of new convent schools for St. Matthew's district, and a convent has also been built in connection with these, Messrs. E. and J. Byrne being the architects, and Messrs. Courtney and Co. the contractors—Mr. J. Fegan being the contractor for the schools.

A healthy sign of the commercial prosperity and industry of Belfast is the number of small shops continually springing up. As a rule, this class of shop accommodation is procured by the occupiers of small houses taking over the adjoining houses and breaking out the frontage. An immense number of public houses have been entirely rebuilt in all parts of the city, but the majority in the Shankhill district, where nearly a dozen have been completed. The demand for all classes of houses appears to be greater in the Springfield road and Bloomfield than in other districts. These facts tend to prove that the building trade in Belfast has received an appreciable impetus.

Blackrock (Co. DUBLIN).—New schools are about to be erected at the Carysfort Convent, Blackrock, at a cost of about £28,000. Mr. Geo. L. O'Connor, Dublin, is the architect.

Bray.—PROPOSED TECHNICAL SCHOOLS.—A special meeting of the Bray Urban District Council was held in the Town-Hall for the purpose of receiving a deputation on the subject of establishing technical schools in the district, and adopting such resolutions as might be deemed advisable in the matter. The deputation comprised the Right Hon. the Earl of Meath, P.C.; the Protestant Archdeacon of Dublin (Dr. Scott), Rev. R. F. Colohan, C.C.; Rev. H. P. Glenn, B.A.; Rev. T. McNevin, C.C.; and Mr. Joseph F. Coghlan. Mr. P. F. Comber, C.E., will be the architect.

Mr. Arthur Taylor, Government Arbitrator, sat in the Town Hall, on the 9th, 10th, and 11th inst., to hear claims of owners whose property is to be taken by the Council in connection with the present Bray Improvement Scheme. Amongst the professional witnesses present were—Messrs. P. F. Comber, R. M. Butler, C.E.'s, and W. M. Battersby and James Adam, Valuers.

Buttevant (Co. CORK).—A new branch of the Munster and Leinster Bank will shortly be begun. Mr. Arthur Hill, M.A.B.E., of Cork, is the architect.

Castlebar.—A large and handsome marble High Altar and Reredos have just been completed at the R. C. Church, which is now practically finished. The contractors are Messrs. James Pearce and Sons, Dublin, and the architect, Mr. Walter G. Doolin, M.A. Marble communion rails, the work of the same firm, have also been erected. The total

RUTLAND GATE MANSIONS.



ELEVATION OF PORCH IN CARRARA WARE

Mr. W. I. CHAMBERS,
Architect, Savoy House, London, W.C.

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cost was close on £1,000. The handsomely hand-wrought brass communion gates were made by Messrs. Kane and Gunning, Dublin. All the workmanship reflects great credit on the craftsmen concerned.

Dalkey.—On Sunday week last the parish priest of Dalkey blessed a new school for boys at Porter's road, which was opened on Monday for the admission of pupils. The school has been erected as a memorial to the late Canon George Harold, P.P. A teacher's residence has also been built in the adjoining plot. His Grace Archbishop Walsh sent a donation of £100. Mr. G. C. Ashlin, R.H.A., was the architect.

Dublin.—THE HOUSING PROBLEM.—The question of how best to provide the working classes with sanitary and suitable homes is just now being very energetically discussed, not only in this country, but abroad. The Dublin Corporation has in hand a most important scheme for the housing of the poorer classes in the north side of Dublin. An area of two and a quarter acres has now been made available to be cleared in order that the work of erecting the new dwellings may be commenced. The site has been acquired mainly through the instrumentality of Mr. Grosart (of McDowell's sawmills), and Mr. Daniel Bergin, Chairman of the Public Health Committee. The former gentleman, by negotiating for the purchase of the site for his own business purposes, enabled the scheme to be carried out at infinitely less expense than if it were known that the place was being taken over by the Corporation. Mr. Bergin, whose local knowledge enabled him to appreciate the importance of securing the area for the object in question, entered into the matter at once, and, together with Mr. Grosart, undertook considerable financial risk even before the matter came regularly before a committee of the Corporation. The Lord Mayor was then asked to inspect the district, and Sir Charles Cameron was likewise brought there, and the desirability of the project was immediately brought home to them. Events progressed, with the result that the Public Health Committee formulated a report recommending the Corporation to proceed with the scheme. In consequence of the course adopted by Mr. Grosart and Mr. Bergin, the area has been acquired at an exceedingly low figure. As already stated, the extent is about two acres and a quarter, and the sum for which this will be acquired will not, it is believed, exceed £7,500. The neighbourhood is one within which the Corporation have already closed over seventy houses owing to their unfitness for human habitation, and the owners not being in a position to repair them. The proposal is to erect good sound buildings without unnecessary ornamentation. The block is to consist of two rows of houses, numbering forty-five in all, and capable, it is calculated, of accommodating 2,000 persons. A 45-ft. roadway will run between the houses. The idea is to have single-room dwellings to a large extent—rooms which will be comfortable, and can be let at two shillings a week. On the Montgomery-street frontage it is proposed to put up shops. Over them would be two-room dwellings, and on the third and fourth storeys single room dwellings. In the houses without shops there would be two-room, or probably larger, dwellings on the first and second floors, and single rooms on the third and fourth. There is to be sanitary accommodation for every two or three rooms and air spaces at the back.

DUBLIN TAILOR'S EXPERIMENT—A NEW DISINFECTING CHAMBER.—In view of the many recent rumours of epidemic disease, the public will be interested to know that a disinfecting chamber or wardrobe has been constructed at Mr. J. M. Barclay's tailoring establishment, 51 Lt. Sackville-street. Mr. Barclay has long realised the necessity of some such contrivance, as it is generally admitted that there is hardly any more fruitful source of spreading disease than clothes. While taking every possible precautionary measure, he realised that something more effective was necessary to guard against the spread of infection, which it has been proved is frequently carried from the houses of the operatives, who may live in the most unhealthy parts of the city, to the work-shops where they are employed. As the result of his studies he has

succeeded, acting in accordance with the advice of a leading medical scientist, in inventing a chamber apparatus, in which every garment before leaving the premises is subjected to a thoroughly effective disinfecting process, whereby any possible germ of disease is completely eradicated. The public will at once recognise the value of this invention, and Mr. Barclay is to be complimented upon the outcome of his years of study. Dr. E. G. McWeeny, who has submitted the disinfecting wardrobe to a series of extremely careful tests, certifies that he has found disease germs of various kinds placed by him in garments hung up inside the chamber, completely killed by the process. In his opinion, the wardrobe will prove most valuable as a means of destroying disease germs.

HOUSING OF THE LABOURING CLASSES.—Housing accommodation for labourers is a very urgent requirement in the North Dublin rural district, and it is, therefore, satisfactory to find that the District Council is taking steps to provide it as quickly as the rules of red tape allow. An application for sanction for a loan of £5,900 for the erection of 32 cottages in the Coolock Division was endorsed by the chairman on behalf of the Council at a recent meeting. It is to be hoped that all the other formalities usual in the case of applications of this kind will be gone through with the least possible delay. In expressing the hope, we have in view, of course, the dilatory methods usually pursued by the Local Government Board, when the consent of that junta to any scheme of improvement is sought. The fact that hundreds of poor families are badly and insufficiently housed, and that much misery is caused in consequence, should outweigh all considerations dictated by the rules of red tape.

Durrus. THE NEW CHURCH.—The works in connection with the completion of the new church at Durrus are rapidly drawing to a close. The building is beautifully situated within a few minutes' walk of the village. The sacred edifice, when completed in a few months' hence, will be a spacious and handsome one, and the good parish priest, Father O'Leary, deserves the congratulations of his people for bringing the project to a successful close. Mr. Daniel O'Donovan, T. C., Bantry, is the contractor.

Enniskillen.—THE NEW TOWN HALL.—OPENING CEREMONY.—The new Town Hall was formally opened on Monday last by the Countess of Erne. The architect, Mr. Scott, was introduced to Lady Erne, and presented her ladyship with a key finely wrought in silver.

The building was erected from the design of Messrs. Anthony Scott and Son, Architects, of Drogheda and London, selected in open competition, and placed first by the assessor, Sir Thomas Drew, Pres. R.H.A., Pres. R.I.A.I. The cost, including furnishing, was about £13,000. The work was commenced in September, 1897. The style of the building is a free treatment of the renaissance. The site is situate in a central part of the town, and on a considerable eminence.

The basement contains apartments for the caretaker, advantage being taken by the inclination in the site to arrange them principally over ground; a large kitchen and pantry, to be used in connection with public banquets, fitted with modern cooking appliances, high pressure copper boiler and copper circulating cylinder, the latter supplying hot water for the kitchen, as well as for the public lavatories in the building; a large general storeroom, an engine room for the fire brigade appliances; a large goods lift to the first floor, and a heating chamber opening into the yard at the back.

The ground or principal floor contains a grand staircase, approached by two entrances, one, the main entrance, from Town Hall street, and the other, a secondary entrance, from Water street—the latter intended as an occasional entrance to public functions and entertainments in the minor and assembly hall.

The main entrance is flanked by the town clerk's office and chairman's parlour on one side, and by the reading room and book store on the other.

The clerk's office, on the left side of the entrance, has a separate stone stairs to a strong room in the basement of the

tower, and is in communication, through the chairman's parlour, with the council chamber.

The council chamber, which is reached either from the grand staircase hall or from the Water street entrance, is floored with polished oak blocks, laid herring-bone fashion, and has a solid carved oak mantelpiece and overmantel, and a movable dog grate, set in a recess, lined with green glazed tiles.

The minor hall, 35 feet by 31 feet, occupies the other side of the Water street entrance, is fitted with a movable platform, and is suitable for small meetings or entertainments. Off this opens a large ante or committee room, divided by movable partitions, intended to be used as temporary ladies' and gentlemen's retiring rooms, in connection with the minor and assembly halls.

The gentlemen's cloakroom and lavatory is placed at the back, and is provided with a hot and cold water supply.

The first floor, along the main front, contains the borough surveyor's offices in the tower angle, and a committee room on the opposite side. Between these two a staircase leads to the Masonic rooms.

The assembly hall has a floor area of 2,975 feet, and is 29 feet high to the ceiling, with a spacious stage, having a separate entrance from the corridor, which runs along the side of the assembly hall. Four doors open into this corridor, affording ample exit from the hall.

The grand staircase terminates on this floor. It is 7 feet wide in the clear, and is constructed of fire resisting materials, steel and concrete, with a casing of coloured granolithic. The balustrade is of Portland stone, with a polished hand-rail of Cork red marble. There is a large landing at the head of the staircase for crush room. The ceiling shows the beams, which are cased round, and indicate the construction of the roof over same.

The third floor, along the main front, contains the Masonic hall and anteroom. Access is had from this floor to the clock chamber in the tower.

Heating.—All the principal rooms, halls, corridors, lavatories, and staircase are heated by warm air, conveyed through flues built in the walls, and regulated at their inlets to the rooms by valved gratings. The heating apparatus, in the basement, is supplied with fresh air by two large trunks under the floor taken from the external walls. The fresh air passes through these trunks, over and around the furnace heating surfaces, is raised to the required temperature, and thence to the various rooms required to be heated.

Ventilation.—The rooms and halls are ventilated by means of fresh air flues in the outside walls, having valved inlet panels to regulate the supply, the impure air being drawn off through exhaust flues from near the ceiling. The assembly hall has similar fresh air inlets and large outlet panels in the ceiling, with a ventilating turret on the roof to draw off the vitiated air. The windows and fan sashes over them are arranged so as to give additional ventilation in warm weather.

Fire Prevention.—In addition to having the principal corridors, lavatories, and staircase constructed of fireproof materials, a system of fire hydrants, having long lengths of hose and hand pipes, connected by instantaneous couplings, is provided on each floor and staircase, one being close to the stage.

Materials.—The walls of the building are constructed of local limestone and brick. The fronts are faced with finely punched limestone, from the famous Carra-Creagh quarries on Lough Erne. This stone was selected after a careful examination and comparison of stone from the principal quarries in the district, on account of its enduring qualities. The mouldings, columns, pilasters and cornices are of chiselled Dungannon sandstone. The ground storey is treated with strong rusticated work, and the upper part terminates with a balustrade.

The main entrance, in Town Hall street, is flanked by pilasters and columns, supporting a balcony, which is reached from a corridor on the first floor level. The upper part of this central feature is treated with flat pilasters, having carved capitals, and is crowned with an entablature and

pediment, with carved tympanum, and three pedestals. On the centre one is carved the arms of the borough, supported by two half female figures conventionally treated. The remainder of this front is finished with an open balustrade, behind which rises the mansard roof and windows of the Masonic hall.

The tower is a commanding feature at the corner of the building, and runs boldly up, without any interruption, to over the roofs. It is then ornamented with four angle turrets, clustered round a circular drum, and the whole is covered by a dome and finial. The dome is cased with copper.

The Water street side is broadly treated by a fenestration, the indices of which are three and five. Two central features are marked by Paladian windows projected beyond the general face, one of them being on the entrance portico.

The grouping of the building is arranged as triple, unequal masses, the tower being the dominant feature, that part containing the assembly hall next in importance, with its subordinate mass, the turrets; and the part towards Town Hall street, with its central feature and pedestals, completing the group.

The central storey of the tower on two faces is filled with niches, having corbelled stools, intended to hold statues. Above this, and under the crown, a space is divided by vertical and horizontal bands, which contains the illuminated clock faces on the four sides. On either side of the clock, on each side are carved drooping floral ornaments.

Hugh R. Lindsay, Esq., J.P., was the chairman of the borough, under whose reign this building was put in hands, and William R. Cooney, Esq., has acted in this capacity during its erection. William Cleland, Esq., is the town clerk, who conducted all the financial arrangements in connection with it. The contractor for the general work was Mr. James Harvey, of Enniskillen. The heating apparatus was supplied and fixed by Messrs. Musgrave and Co., of Belfast; the gas-fitting by Mr. Hands, manager of the Enniskillen Gas Works. The stone carving has been executed by Mr. Hart, of Brooksborough. The entire work was carried out from the drawings of, and under the direction of, the architects, Messrs. Anthony Scott, M.S.A., Cor. M.C.S.A., Belgium, and William A. Scott, A.R.I.B.A., Councillor, M.S.A., of Drogheda and London.

The Town Hall has been fully illustrated in the *Irish Builder*.

Galway.—A valuable slate quarry has been discovered on the Cappard estate, Co. Galway, on the property of Major Galbraith, J.P. A company is about being formed for the purpose of working it early this year. This will be a great boon to the poor people of the neighbourhood, and will serve as a sort of permanent employment for the hard-working cottiers, whose life is a struggling existence on the bleak, wind-swept Echtge Hills, which separate that part of the Shannon valley in the Co. Galway, in the Woodford direction, from the plain of Aithue.

Limerick.—The House Committee of the Limerick Guardians reported to that body at the last meeting that they had considered the claim of Mr. O'Malley, B.A., B.E., engineer of the Union, to be paid the amount of 2½ per cent. on the amount proposed to be expended in improvements in the workhouse in connection with the improved kitchen, laundry, and heating apparatus, as shown by his plans and estimate, and amounting to £5,000, and found that the said claim is entirely in accordance with professional usage. The committee added that Mr. Hayes, who was fully conversant with such matters, and having certified to this effect to the meeting, the committee recommended the Board to sanction the payment of Mr. O'Malley's claim, which amounts to £125. They expressed regret that the improvement scheme had not yet received the sanction of the Board, notwithstanding the fact that the majority of the Guardians signed a memorial in favour of it; since which several circumstances have occurred which should, in the opinion of the committee, have tended to influence the Guardians (who were opposed to it) to reconsider their decision.

Lisnaskea.—On Saturday week last Messrs. Stewart Lowe and Sons, Dublin, were appointed by the Rural District Council as architects and engineers for the proposed scheme under the Labourers' Acts in the district. The fees agreed on are 35s. per cottage for all work done under the Act, and to include the cost of the ordinance maps.



Bray.—THE PROPOSED PIER AND PROMENADE.—A special meeting of the Urban Council was held last week. The meeting was called for the purpose of considering the position of the Council with regard to the proposed scheme for erecting a promenade pier at the Esplanade. It may be remembered that an English syndicate obtained powers from the local Board to erect the pier, and the sum of £2,500 was lodged in bank as a guarantee of *bona fides* in the name of Mr. J. E. McCormick, the then Chairman of the Bray Commissioners, and Mr. Isaac Molloy, of the firm of Molloy and Molloy, solicitors for the promoters. The time of starting the work having expired, owing to the difficulty of raising capital, caused by the war and other adverse influences on the Money Market, it became necessary to promote a small Bill in Parliament to secure an extension of time for undertaking the project. It seems there is no prospect of the promoters going on with the scheme, and the underwriter, Mr. Isaacs, of London, who apparently advanced the guarantee deposit, wishes for a return of the £2500, and, it is believed, has instituted an action against Messrs. J. E. McCormick and Molloy for the amount. The matter is further complicated by the claim of Messrs. Casey and Clay, solicitors, for the sum of £470 amount of costs incurred in connection with the recent Parliamentary measure to secure the extension of time. Messrs. Casey and Clay have asked the Bray Urban Council to have their bill of costs taxed in order to enforce their claim, and an important point in the discussion at the special meeting of the Bray Council on last week was whether such a proceeding would render the Council liable in any way, the understanding in the first instance being that the costs of procuring the Bill in Parliament should be borne by the promoters of the Bray pier scheme. The Council went into Committee during the discussion on these various points; but the result will probably be a settlement of these rather involved questions in the superior courts. On Monday last a Local Government inquiry into the proposed Bray and Enniskerry Light Railway was opened at the Town Hall.

Belfast New Dock will be 750 feet long to begin with, provision being made to allow of an extension whenever needful; it will be 100 feet wide on the floor, and 132 at the coping; and the entrance fitted with travelling caisson will be 96 feet wide. In depth the dock will be 32 feet on the top of the blocks below high water level, and 4 feet 6 inches from the top of the blocks to the bottom. To all intents and purposes the floor will be 36 feet 6 inches below ordinary high water mark. Work on the new dock will occupy at least a couple of years. Meantime it is not decided whether a larger than the existing 100 ton crane will be laid down, but the builders are confident that they will secure this too. Hamilton Graving Dock is about 500 feet long, and while a capital dock of its class and size, it is very seldom used for new ships, as the Belfast firms do not often construct steamers of less than the length mentioned. For repair work on smaller craft, however, Hamilton Dock is about 500 feet long, and while a capital dock of its class and size, it is very seldom used for new ships, as the Belfast firms do not often construct steamers of less than the length mentioned. For repair work on smaller craft, however, Hamilton Dock is perfectly suitable.

Admiralty Contracts.—A BELFAST TENDER ACCEPTED.—The Admiralty have accepted the following tenders:—Messrs. Harland and Wolff, Belfast, for the machinery of the battleship "Queen"; the Greenock Foundry Company, Glasgow, for the machinery of the battleship "Prince of

Wales"; Messrs. Hawthorn, Leslie, and Co., Newcastle-on-Tyne, for the machinery of the first-class cruiser "Cornwall"; and Messrs. Humphreys, Tennant, and Co., Deptford, machinery of the first-class cruiser "Suffolk."

Buncrana.—CONSTRUCTION OF BUNCRANA AND CARN-DONAGH RAILWAY.—In the Rolls Court the case of Alexander and others v the Londonderry and Lough Swilly Railway Company came on for hearing. This was an application on the part of the defendants for an order that the defendants be at liberty to serve a third party notice on Messrs. Pauling and Co., Ltd., of London, and that service be substituted on their agent and manager, Mr. Fairbank, who resides at Linsfort, near Buncrana. The action is brought by the plaintiffs for an injunction to restrain the railway company from opening quarries upon part of the lands of Ballymacarty, Lower, Fohan, and also from taking, or rising, or removing for their own use any limestone, gravel, or ballast, or other minerals except such parts as should be necessary for use in the construction of the extension railway from Buncrana to Carnadonagh. Plaintiffs also seek damages for wrongful acts by the defendants. It appeared that Messrs. Pauling had contracted to build the extension railway, and had entered into an agreement to pay all law and other costs and compensations that must become payable to the owners of the lands taken in connection with the railway, and to indemnify the defendants from all such claims.

The Master of the Rolls granted the application, and gave Messrs. Pauling ten days within which to enter an appearance to the notice.

Dublin.—SOUTH RURAL DISTRICT COUNCIL.—LABOURERS' COTTAGES.—On the suggestion of Mr. L. Dennehy, solicitor to the Council, a resolution was adopted to the effect that an improvement scheme be prepared for the erection of labourers' cottages at Crumlin, where they were much required, was passed, on the motion of Mr. Lawlor, seconded by Mr. Molloy.

LIGHTING RATHFARNHAM.—Mr. Hodges, J.P., wrote complaining of the dangerous condition of the road between Terenure and Rathfarnham owing to the absence of light in the district.

The Chairman said no District Council could light even one lamp without the authority of the Local Government Board. They had asked for that power there and they had not got it yet.

It was decided to ask the Local Government Board to expedite the matter.

DRAINAGE OF SEAVIEW TERRACE.—The Chairman moved the adoption of a report on the Seaview terrace drainage, which recommended a plan estimated to cost £380, provided Lord Pembroke contributed £95 towards the cost, and the balance to be levied on the property benefited and on any other houses that may be erected on the area named.

Mr. M. Flood moved an amendment that the charge of the drainage scheme be levied on the Rural District of South Dublin.

Mr. Isaac seconded the amendment.

The amendment was lost, and the resolution adopted by a large majority.

Dungannon.—DUNGANNON URBAN COUNCIL.—The meeting of Dungannon Urban Council was held in the Council rooms, Mr. Francis McElhone presiding. A memorial from the Council to the Board of Trade asking for a Provisional Order for the lighting of the town by electricity was read and signed by the chairman and sealed. A circular letter was read from the Local Government Board.

Dunaskea (Co. TIFTERARY).—A Romanesque High Altar, from the design of Mr. W. G. Doolin, has just been finished by Mr. John Early, sculptor, of Dublin, and shows evidence of great care and skill in the workmanship.

Enniskerry (Co. WICKLOW).—The survey for the proposed new electric tramway, which will run from Dublin to Enniskerry via Stepside, is practically completed. The route will be through the delightful scenery of Dublin and the Scalp. The total length of the line will be about

13 miles to Bray, and about 3 miles additional to Enniskerry.

A letter was read at a recent meeting of the Guardians of the Rathdown Union, from Mr. Lane Joynt, solicitor, Dublin, with reference to the proposed tramway to Bray and Enniskerry, requesting to be informed if the Board assented to the proposal.

Mr. Clarke thought they should ask the promoters of the scheme to construct a line from Temple Hill, Blackrock, via Stradbrook, through Cabintoe to Loughlinstown and Bray. He proposed that this be done.

At the Bray Urban Council meeting, the clerk said he had received a letter from the Bray, Enniskerry, and Scalp Tramway Co. showing the cost of carrying out the project, which they estimated at £220,000. He (the clerk) suggested that the council should ask the engineer to say how the tramway would affect the roads in this district.

It was decided to refer the matter to the engineer for a report, and that a special meeting be called to consider the subject.

Louisville (CO. MONAGHAN).—Extensive additions to the Convent of St. Louis are about to be undertaken from the designs of Messrs. Hague and MacNamara, architects, Dublin. The quantities have been prepared by Messrs. Slevin and Sons, Dublin.

Lurgan.—This Council held a special meeting in the Town Hall. The Council adopted a recommendation of the whole body in committee in favour of letting by auction 200 feet of building ground on each side of the new street opened off Market street, and also of the letting by auction ground for the erection of a new street on the Harkin's Court area, recently cleared away under a town improvement scheme. Mr. Bunting and Mr. McNally opposed the resolution. Mr. McNally pointed out that the Harkin's Court area was purchased by the town at a cost of £2,200, and cleared for the purpose of opening a new market there. Mr. Hazleton stated that the area in question was a dangerous plague spot in the town, and they hoped to realise the interest on at least £1,000 by the present transaction, and to secure the erection of good artisans' dwellings on a 40 feet street. Mr. Thompson called attention to the transaction of business in Lurgan pork market before the arrival of Belfast buyers, and the Council resolved to take measures to have the market bye-laws strictly enforced in future.

Rathmines.—**BELFAST BANKING COMPANY**.—The Rathmines branch office of the Belfast Banking Company, which is under the management of Mr. William Ahern, has been rebuilt at a very big cost. The new building was opened a few days ago. It is a prominent construction at the corner of Wynnefield-road and Rathmines-road. The design is very effective. The entrance forms the principal feature. It is wrought in cut stone, the jambs having sunk and carved in friezes, with griffins at the angles. The turret is wrought in terra cotta. Messrs. McLoughlin and Harvey, Dartmouth road, were the contractors. The plumbing and gas-fittings and bell-wiring were carried out by Mr. Joseph Boulger, Mary street, Dublin, and the electric light fittings by Mr. J. H. Calvert, Belfast. Mr. Vincent Craig, F.R.I.B.A., of Belfast, was the architect.

Waterford.—The *Waterford News* states that a very important proposal will be submitted to the Waterford Town Council within the next few months for the establishment by a wealthy English company of a joint electric tramway and city lighting system, the syndicate being willing to expend initially as much as £50,000 on the dual project.

WATERFORD AND NEW ROSS RAILWAY.—The cuttings for this line now show marked progress, and the Dublin, Wicklow and Wexford Railway Company will soon be in direct communication with a much-needed connection, and one which, besides giving the system an excellent and important terminus, should afford relief to its present depressed financial state.

Wicklow. Alterations, costing about £1,000, to the constabulary barracks, are in progress under the Board of Works. Mr. T. J. Mellor is the architect.

SPECIFICATION.

The Alexandra Nurses' Home, Curragh Camp. Excavator and Bricklayer.

(Continued.)

Centering not to be Disturbed.

The centering for concrete work is not to be disturbed for at least 14 days from the time of laying the concrete.

Lias Lime.

The lias lime for concrete foundations to be freshly burnt and finely ground, of approved quality.

Cement.

The contractor binds himself to deliver the cement on the works, so as to allow ample time for testing, in order that if a brand fails at the test there will be time to try another before it is required for use.

The cement to be fine enough to pass a sieve of 2,500 meshes per square inch without leaving more than 10 per cent. behind, and to weigh not less than 110 lbs. per struck Imperial bushel, filled in lightly by sliding down a board or trough, kept slightly above the surface of the cement as it rises in the measure.

Foundations.

To be composed of lias lime, in the proportion of one of lime to six of gravel and sand.

Floors, Hearths, and Pavings.

Where shown on plan, to be composed of Portland cement, in the proportion of one of cement to four of gravel and sand, 4" thick; and, before being brought to the required thickness, a coating of about $\frac{1}{2}$ " thick, of two parts of fine granite siftings to one part of cement, is to be laid on and thoroughly incorporated with the concrete whilst still unset, and to be floated and trowelled, and finished to a fair and even surface.

Concrete under Tiling in Porch.

To be as described for floors, etc., but omitting the finishing coat of granite siftings.

Do. under Boarded Floors on Ground Floor.

To be in the proportion of one of cement to five of gravel and sand, 3" thick, and floated on surface only.

Roof of W.C. in Yard.

To be as described for floors, average 5" thick, but omitting the granite siftings, and finishing the top surface with rendering of cement and sand, 1 to 2 $\frac{1}{2}$ " thick, floated and well trowelled. The top surface to be laid to eaves gutter, and the projection over walls to be throated.

Foundations to Concrete Floors and Pavings, etc.

All concrete floors, hearths, and paving to have a foundation of broken bricks 4" thick, broken to such size as may be approved, and laid to falls where required.

Gravelling to Yard and Paths.

The yard and paths, where shown on plan, to be properly graded to surface channels, etc., and to be covered with 4" of stone broken to suitable size, or gravel of approved quality, and finished with a layer 2" thick of screened gravel, as may be approved. The whole to be well rolled, and finished to a firm and even surface.

Lime.

The lime for mortar for brickwork and for plastering to be local Roche lime, fresh, well burnt, and supplied in lumps of approved quality. The quality to be determined by such tests as may be directed.

Sand.

The sand to be clean pit or fresh water sand of approved quality, and to be washed if directed when used with cement.

Mortar.

The mortar to be composed by measure of one part lime, and two parts sand, well ground together in a mill having edge runners. The lime to be measured in the powder produced by slacking it, without excess of water.

The mortar to be mixed on the works, on a clean flag or boarded platform.

The mortar for external face of brickwork to be made with finely sifted smith's ashes instead of sand, in such proportion as may be required to produce the required tint.

(To be continued.)

CORRESPONDENCE.

DOES "INDIGENOUS" IRISH ART EXIST?

DEAR MR. EDITOR,—As regards the existence of *pre-Christian* Irish Art as applied, in a general sense, to decorative use, I must confess that, in common with others, I am very sceptical on this point, because there seems to me to be great confusion of ideas and of terms regarding such prehistoric or "Pagan" Art—that is to say, of art forms appertaining to the early period of the "Hedonism" or "Paganism" of Ireland. (Note *a*).

With the exception of very rude forms of decoration (if such they may be called), as spirals, zigzags, crosscut edgings, and very rare antropomorphic sketches, I am unaware of any distinctive type worthy of notice that appertains to the pre-Christian period, which type may have prevailed amongst the Celtic tribes of this country.

It is only when we arrive at the period during which interlacings of a very complicated and beautiful description were used in this land (such as we see scratched on the faces of a piece of greenish slate discovered during the recent excavations of lake dwellings near Clones, see Journal of the R.S.A.I. for September, 1900), that we commence to perceive the beginning of a series of ornamentation, erroneously called Irish or "Celtic," which ornamentation was spoken of as peculiarly *Irish*, and belonging solely to this land.

But any intelligent observer, after having examined the collections of Museums on the Continent, will clearly perceive that this term "Celtic" art is a misnomer. I have seen and examined, even at the moment of their discovery, in the ancient Gaulish (or Gallic) provinces of Hainault and Brabant, arms, pottery, and personal ornaments, engraved and chased, with the mis-called "Celtic" ornamentation exactly similar in character to what one sees in our Royal Irish Academy; in the Museums, for instance, at Copenhagen and Berlin, there are innumerable objects of domestic and warlike use, alike in type to similar Irish remains.

In fact our early Irish implements are decorated in a like type to those which I have seen found in the old Frankish burial places which were explored some years ago near Namur (Belgium).

Many of these artistically ornamented objects are pre-Christian, and all of them, like our Irish examples, bear the impress of the Oriental or Romano-Byzantine school of ornamentists, which in this land found its highest expression in the wonderfully skilful illuminations of the Irish MSS.

It is therefore simply nonsense to be talking of a distinctly "Celtic" style of artistic ornamentation, having taken its rise in this island, when we find all over Europe and even to the confines of Asia, Africa, America, and in the remotest islands of the Pacific, the very same *Aboriginal* types which were evolved in the earliest ages of the world.

It is recognised that these Oriental forms of ornament are both rich and harmonious in effect and in character, and that they attained their higher development in the Merovingian period from Circa 400 up to the end of the twelfth century; these Byzantine forms still flourish in Russia, coming principally from the monastic school of Mount Athos.

I am of opinion that our Irish artists and artisans were developing a most beautiful and interesting form of really *indigenous* Art about the close of the fourteenth century; they were slowly but surely evolving forms of decoration and ornament, which were, in parts, founded on the preceding Gothic or "Ogival" works of the previous Hibernian Norman centuries.

Taking as their basis (I am speaking principally of Architecture, the mother of all the arts) the pointed "arcs" of the Ogival School, they changed and modified their various features in such a way as to create an entirely new type, which belongs neither to the "Flamboyant," the Decorated, or the Renaissance models which were co-existent at that time.

This charming and truly local style is embodied with as much delicacy of feeling and beauty of form as any of the

illustrated MSS. can show in their golden pages. I allude to the graceful curves, the interlaced foliage (so sharply and skilfully carved), and the refined adjustment of forms to be seen in such works as the Eastern window of Killooley Abbey, the "Sedilia" at Holy Cross, County Tipperary (as well as the tracery in the windows of same), the cloisters of Quinn Abbey, the carved and moulded work at Callan Priory, and numberless examples scattered throughout the length and breadth of the land; even in the humblest and utterly forgotten edifices (oratories, castles, keeps, manors and houses), which we find still standing decayed, weather-beaten, and torn by tempests and by man's hands on the hills in the glens and plains of this island.

I am convinced that this exquisite artistic type of Irish work of the 15th century is worthy of our earnest attention and intelligently applied study. I am sure it would richly repay us if we developed its culture and sought its practical application to our everyday needs in this country (as is done in the great Art schools of Belgium), instead of hopelessly working on the worn-out lines of the mis-called "Celtic." Byzantine interlaced ornament and similar ideas, as we have been doing for the past 50 years. Why have we not endeavoured to place before the students in the new technical schools some examples of this *truly* "national" style in order to form their tastes? It seems to me, as to others, that it would be much better to give as models, to our artisans and decorative artists, examples of stone and wood carving, and other work derived from our local types, than to be giving them as has been done up to now, Classical, Greek, and Roman "antiques" to puzzle their brains over; possessing no true national characteristics of any interest whatever, except to "dilettanti" amateurs. All such un-Irish architecture, as pains the eyes of intelligent connoisseurs, to be seen in the heavy colonnades, facades, and frontispieces of Trinity College, the old Parliament House, the Post Office, the Mansion House, and even the Cathedral (as in Marlborough-street) and other architectural anomalies are due solely to the neglect of the art forms which were developed here 300 years ago, and which now demand our studios attention.—I am, Mr. Editor, yours truly,

M. J. C. BUCKLEY.

Montmorency, Youghal, January 1901.

(*a*) "Paganism" simply means the mental moods of the "Pagani," or the people inhabiting the "Pagus," or country parts, in contradistinction to the inhabitants of the towns, burghs, or villages, called "cives," or citizens. It is a remarkable fact, even to the present day, that the rural inhabitants of all countries (in French, "paysans," or peasants) are more firmly attached to old methods and forms of art than those of cities.

(*b*) See the copious illustrations in Mons. du Chailieu's book, "The Age of the Vikings," such as the lances, hatchets, shields, pottery, etc., etc., found in cairns, and tumuli, in Sundermanland, and elsewhere, in Norway and Denmark.

SOUTH DUBLIN RURAL DISTRICT COUNCIL.
APPOINTMENT OF CLERK AND ENGINEER.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—I have read with much interest your able stricture on the new and unique appointment of clerk and engineer to the above body. While admitting the strength and force of your arguments on the points raised in the interests of the profession, allow me to say that in this particular case you appear to be insufficiently informed, when you confound the position of "Clerk of the Union" with that of Clerk and Engineer of the District Council.

What has happened is this—The late clerk, Mr. Thomas Phelan, held the position of Clerk of the Union, as well as Clerk of the District Council, from the passing of the Local Government Act up to his demise, some weeks ago. It will be admitted that the position of Clerk of the Union, in such a very large establishment as that of the South Dublin Union, is in itself a very important and onerous office, and the Council, very wisely, I think, came to the conclusion of appointing a clerk of their own—one who would attend to the duties of the Council only. The Council, having occasion to frequently requisition the services of an architect and engineer in connection with the Public

Health Act, the Labourers' and other Acts, which they have to administer, further resolved that their clerk should be an engineer.

Having finally settled the point, they applied to, and obtained the sanction of the Local Government Board to the project. The matters to be dealt with by the District Council are all of a technical character, and it is not at all unreasonable that their clerk should be a man possessed of technical knowledge, capable of dealing with contracts and contractors, capable of designing and carrying out building and sanitary works, particularly at a time when the rehousing of the poor, the labourers and the artisans—together with the important problem of sanitation—are engaging so much public attention. If the positions of Clerk of the Union, Clerk of the Council and Engineer had been rolled up into one, then I was with you, to the death. But the Board of Guardians elected a Clerk of the Union on the same day as the Council elected an engineer. I feel certain that had these facts been known to you, your "Comments" would have been less severe.

While on the subject of District Councils, I wish you would extend your enquiries elsewhere, and find out what class of men are being appointed by the District Councils to the position of engineers all over the country.

The South Dublin Council, to do it justice, advertised for a qualified engineer, and, on inquiry, I have learned that the gentleman appointed is an Associate of the Royal Institute of British Architects. You say that the Local Government Board should be approached on the question of those appointments; I say so, too. It would be most interesting to have a return asked for by some influential member of Parliament when Parliament opens, asking for particulars as to qualifications and professional training of the architects and engineers of Rural and Urban District Councils throughout Ireland. This would meet your reference to "black leg" labour.

You also refer to the "fair wages" resolution of the House of Commons; well, then, I would suggest that another deputation be organised to wait upon the so-called professional architect and engineer, living in Dublin and suburbs, who looks out for every advertisement from the provinces and makes application, proposing to carry out works in connection with the Labourers' Acts, and other works, at from 15s. to 25s. per cent., to include also the honour and glory of paying their own travelling expenses.

I, advisedly, refrain from using the word, "hotel expenses," for it is obvious that the poor devil who proposes to work for the sake of getting the work at such starvation prices, would not dare to look at the side of the street on which a hotel stands in a provincial town through which he passes on his cheap iron horse.

I am not referring to local handy provincials, but to young gentlemen who consider that residence in or near the metropolis is a sufficient hall mark of proficiency, and what they lack in professional experience, they make up in cheek and city hauteur. Do you want particulars and facts in support of the above? If so, you can have them from,—Yours truly,

OBSERVER.

ANNOUNCEMENT.

Following our recent reference to a proposed series of interviews with leading men connected with building in Ireland, we have the pleasure to announce that in our next issue of 30th inst., we shall make a fitting commencement with the President of the Royal Institute of the Architects of Ireland, Sir Thomas Drew, P.R.H.A. The article will be illustrated.

In a long letter to an Armagh contemporary, and headed "Engineer touting and ungentelemanly tactics," Mr. H. C. Parkinson, C.E., architect, calls attention to the methods of the "Ulster Sanitary Association" in its quest after work. There is only one remedy for this sort of thing—as we have over and over again indicated—and that is, for the architects to combine, fix a standard and stick to it. With a strong and representative institute, such depredations would be stamped out.

APPOINTMENT OF SUPERINTENDENT OF WORKS, BELFAST.

A meeting of the Council in committee was held recently in the Council Chamber at the Town Hall. The Lord Mayor (Sir Robert McConnell, Bart.) presided, and there were fifty members present. The meeting was specially convened for the purpose of selecting a superintendent of works—undoubtedly one of the most important appointments that has yet been made by the Corporation, and one which, it is believed, if the duties are carried out as the Council desire, will be of immense service to the ratepayers. There were a great many candidates, but the Works Committee had considered the claims and abilities of all the applicants, and had finally reduced the list to five, all of whom were present at the meeting, with the exception of one, resident in the South of England, who, unfortunately, through stress of weather, was prevented from arriving here. By request of the meeting each candidate was called into the room, and answered questions put by the Lord Mayor and other members of the Council. Three votes were then taken, and the result was that Mr. Hector F. Gullan, Assoc. M.Inst. C.E., Vanhault, Hoylake, Cheshire, was appointed by a considerable majority. The successful candidate was summoned into the Council Chamber, and informed by the Lord Mayor that he had been appointed to this most important post, subject to confirmation at the next ordinary meeting of the Council. Mr. Gullan thanked the members in a few words, and the proceedings terminated. We understand that Mr. Gullan, who is thirty-one years of age, has had fourteen years' experience in the superintendence of works of a large and varied character and in the control and management of large bodies of workmen. From 1886 until 1891 he was engaged with Mr. Harrison, consulting engineer to the Birkenhead Corporation, and under him took charge of various important works, including sewerage and water supply works. From 1891 to 1899 he was engaged with Mr. Footner, chief maintenance engineer to the London and North-Western Railway, and had supervision of many important operations. From 1899 until recently Mr. Gullan was engaged on the construction of sixty-eight miles of the Imperial Chinese Railway.

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OUR ILLUSTRATIONS.

ELEVATION OF PORCH IN "CARRARA WARE."

Designed by Mr. W. I. Chambers, architect.

HOUSES AT CHINGFORD, ESSEX.

These houses will, we believe, be of interest to our readers as further examples of the class of suburban houses now being erected to a large extent in England. The architect is Mr. W. I. Chambers, Savoy House, London.

That Maker of most excellent drawing and mathematical instruments, Mr. Stanley, of Great Turnstile, London, sends us some particulars of some of his most recent novelties. Space forbids a detailed description, but to Architects and Engineers "Stanley" stands for excellence of manufacture, and we say, send for a price list and catalogue.

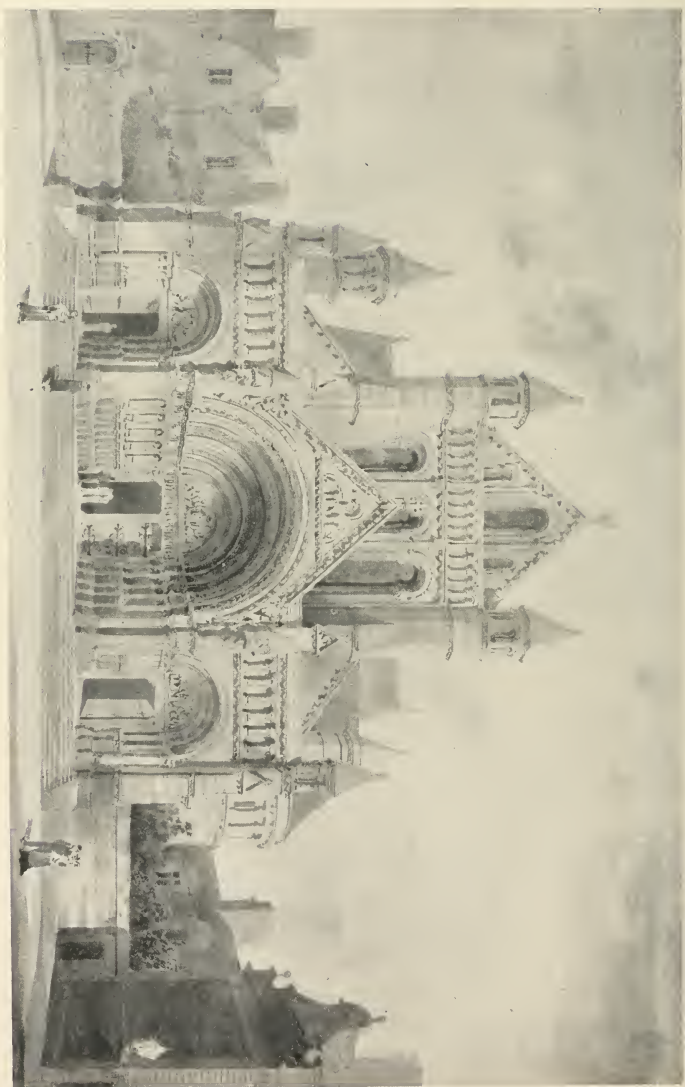
ARCHITECT'S PUPIL:—Vacancy in the office of a leading Dublin Architect in good practice. Exceptional opportunities of acquiring professional experience.—Reply, B.A., *Irish Builder* Office, 11 Lower Sackville Street.

TO BUILDERS.

Tenders will be received for Building a new office for the Munster and Leinster Bank at Dunmanway, Co. Cork. Plans may be seen and all particulars obtained on application to the Architect,

ARTHUR HILL, B.E., F.R.I.B.A., M.R.I.A.
22 George's Street, Cork.

N.B.—The lowest Tender will not necessarily be accepted.



THE NEW CATHEDRAL AT BELFAST.

A Study by SIR THOMAS DREW, P.R.H.A.

THE IRISH BUILDER.

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, & SANITATION,

ARTS AND HANDICRAFTS.

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11 LOWER SACKVILLE ST.,
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

The proposed additions to the County Asylum at Castlebar are to be put in hands as speedily as possible.

They will cost some £40,000. Mr. E. Dixon, the County Surveyor, will act as architect.

The employment of County Surveyors and other public officials as architects is a sore grievance with the architectural profession.



MR. ANTHONY SCOTT, M.S.A.,

THE ARCHITECT OF THE NEW TOWN HALL, ENNISKILLEN.

The Corporation have decided to accept Mr. Thomas Mackey's tender of £4,250 for the new Morgue, which the City Architect (Mr. MacCarthy) has lately designed.

By the way, we owe the City Architect an apology. In our last issue, the "Bull Alley scheme" (Lord Iveagh's) for which Messrs. Parry and Ross are the architects, was described as the "Bride's Alley Scheme," for which Mr. MacCarthy is alone responsible.

We are sorry to note, too, that Messrs. Parry and Ross are only carrying out the designs of an English architect, Mr. Dellissa Josephs. It is rather regrettable that Lord Iveagh should have again thought it necessary to go across the water in search of an architect. Was there no practitioner here capable of meeting his lordship's views?

There can be no doubt that the new Enniskillen Town Hall, the opening of which was reported in our last issue, is about the best designed and arranged town hall in Ireland. No other is so completely finished and fitted. The character of the detail throughout is pleasant and refined.

It is remarkable that a town of the size of Enniskillen should have had such enterprise as was necessary to begin and finish so big an undertaking.

By an ingenious financial arrangement, the building of a new Town Hall will not add a fraction to the rates.

One of the pleasantest features of Enniskillen, next to its unique and charming natural surroundings, is the condition of friendliness and good feeling in which the opposite political parties and persons of various religious views dwell. Intolerance and bigotry are unknown.

The opening ceremony was a most brilliant affair, and in the evening the Town Commissioners entertained their friends and a number of visitors to a banquet, which was one of the most enjoyable functions we remember. Pleasant to relate, amid many toasts, the toast of the evening was "Our Architect." At least, so it was described by that ideal giver of a feast—Mr. Richie, Editor of the *Fermanagh Times*, who presided.

Mr. Edwin Swan, a young, but extremely clever, artist from the other side of the Channel, is at present in Dublin, where he is engaged painting a large portrait of Sir Arthur Vicars, Ulster King of Arms, whom the artist has portrayed in the gorgeous tabard which is worn at certain State ceremonies, such as an investigation of a Knight of St. Patrick.

We are glad to hear that Mr. Harry Allberry, the popular ex-honorary secretary of the Architectural Association of Ireland, has been appointed an assistant surveyor of the Board of Works.

We notice a considerable sum has now been raised for the purpose of erecting a statue to commemorate the visit of Her Majesty, our late beloved Queen, to Ireland. It is to be hoped that an effort will be made to ensure that the memorial will be a real addition to the artistic monuments of the city.

Mr. Harry Hems, Exeter, received, shortly before her last and fatal illness, a letter from Her Majesty's private secretary, Colonel Sir Arthur Bigge, K.C.B., expressing to him Her Majesty's interest in his thirty-second successive annual feast to the aged poor of Exeter on Christmas Day last, and conveying the hope that Mr. Hems may long be spared to continue his generous bounty to the less-favoured citizens. This was the second time Her Majesty had forwarded her gracious congratulations to Mr. Hems, the former occasion being Christmas, 1879.

A much-needed building in Dublin is the new Bridewell, now in course of erection from the designs of Mr. J. H. Pentland, R.H.A., chief surveyor of the office of Public Works. It is intended to replace the old Richmond Prison, now Wellington Barracks, which, some years ago, was taken over by the War Department, or, perhaps, the Corporation would say "filched" because no compensation was paid to the ratepayers of Dublin. Since then, prisoners awaiting trial have been lodged in the Mountjoy Convict Prison—a very objectionable arrangement. Not until the soldiers had been some time in occupation of the Wellington Barracks, did the authorities notice the inappropriateness of the legend, boldly cut across the entrance, "Cease to do evil and learn to do well." It was soon removed!



Belfast—There is some talk of the competition for the extensive additions to the asylum, proving like the notorious Assembly Hall competition—abortive, as there is now a question of planning the building on the cottage system. We understand that the Board of Control, in the first instance, insisted upon the successful competitor taking another architect into partnership.

Blackrock—**TECHNICAL EDUCATION.**—On the report from the Committee having charge of the arrangements for the Technical Schools being brought up, the Engineer stated that since he had last considered the matter of extending their hall to meet the requirements of the technical schools he had changed his mind. He had found that the Town Hall, which was badly built, would not allow them to extend it in the way already proposed, but they could build an addition to it at one side which would meet all their requirements. The extension of the present hall would cost £2,000; the building of the addition he suggested would cost only £500 more.

Castlebar—A Catholic Chapel is in course of erection at the District Lunatic Asylum. Mr. Dixon, County Surveyor, is the architect.

Dublin—Messrs Carroll and Batchelor have designed a number of suburban houses to be erected in the Glasnevin district for Mr. W. Wallis.

Messrs. Musgrave and Co., Ltd., have just finished a hot water heating installation for the Nassau-street premises of Messrs. Brown and Nolan, Ltd., they have also completed the heating and ventilation on the "plenum" system of the big printing works of the same firm in Denzille-street.

A second concert hall, committee rooms, etc., are to be added to the Father Mathew Memorial Hall, Church-street, Dublin. Mr. Walter G. Doolin, M.A., is the architect, and Mr. Patrick Hanway, the contractor.

The Plumbers' Strike is now "going strong." It has now lasted ten weeks.

The first complete cargo of wood goods arriving at this port since the opening of the New Year is the "Andhild," of Fredrikstad, with planed boards for the Dublin Timber Co., Ltd. The "Lord Iveagh," of Baltimore, discharged a parcel of staves for Messrs. T. B. Allen and Co., also consignments of oak and slates to order. There is no change noticeable in the general building trade.

Londonderry—It is stated the proposed additions to the Asylum are likely to be abandoned. Messrs. F. Fuller and C. A. Owen are the architects.

NEWBLISS Presbyterian Church, which was renovated and re-seated some time ago, has now been painted and finished off beautifully inside, and fitted up with the new small bore hot water system, the contract for which was given to Messrs. Boyes and Rudkin, 86 Mountpottinger-road, Belfast, who deserve great credit for the successful and complete way in which they carried out the work under the personal supervision of Mr. Alex. Rudkin.

New Ross—A Carrara marble High Altar and side Altar of St. Joseph are in course of erection at the R.C. Church, also marble communion rails, steps, and altar steps. The total cost is about £2,000. Mr. W. G. Doolin, M.A., is the architect, and Messrs. James Pearse and Sons, the contractors for the altars, Mr. Edmund Sharp for the rails, and the Irish Marble Co., Kilkenny, for the steps.

Omagh—A church has been erected for the Catholic inmates of Omagh Asylum. The building is 80 ft. long and 30 ft.

wide, and will seat 500 persons. Mr. C. A. Owen, of Dublin, is the architect. The contractor was Mr. J. Colhoun.

Pembroke—The Local Government Board sanction the expenditure of £25,000 for artisans' dwellings at Ringsend.

Rathdown—The weekly meeting of the Board of Guardians of Rathdown Union was held in the Boardroom of the Workhouse, Loughlinstown, on Wednesday.

THE ROMAN CATHOLIC CHAPEL.—The Local Government Board wrote stating that they had received the report of their Inspector, Mr. O'Brien Smyth, on the inquiry held by him respecting the application of the Guardians for a loan of £4,500 for the purpose of erecting a Roman Catholic Chapel and Nuns' Residence at the Workhouse. They considered that the buildings for the purposes mentioned by the Guardians were requisite, but the evidence given at the inquiry was of such a character as would appear to make it desirable that the Guardians should be afforded an opportunity of re-considering the site proposed for the buildings, and also of ascertaining from their architect whether any reduction could be made in the estimate. Mr. P. F. Comer is the architect, and Mr. D. W. Morris the Quantity Surveyor.

The Rural District Council will shortly be advertising for contractors for about twenty-five labourers' cottages, under No. 3 scheme. The architect is Mr. R. M. Butler. A fourth scheme is in contemplation.

Rathmines—The Urban Council advertise for contractors for the artisans' Dwellings Scheme. There was a competition for the design, the successful competitor being Mr. F. G. Hicks. The quantities have been taken out by Messrs Beckett and Metcalfe.

Stepaside (Co. Dublin)—Alterations and additions are being made to the licensed premises of Mr. John Smyth, R.D.C. The improvements comprise new bar, bar parlour, ladies' tea room, lavatories, etc. An extensive tea garden will be a feature. Mr. R. M. Butler is the architect.

Waterford—**OPENING OF THE ST. ALPHONSUS NEW SCHOOL** This new building has just been erected at the junction of the Passage Road with St. Alphonsus Road, by Mr. Patrick Costen, of Waterford, and is finished in every detail in a manner which is highly creditable to the contractor. Looking at this structure one cannot help remarking the rapid advance education has made. With the new century just opening, we find the shelter of the hedge replaced by a most imposing building, with every modern improvement as regards sanitation, ventilation, light, and general comfort of those who will be educated within its walls. In the first place there is a commodious play ground, with a beautifully ornamented drinking fountain, every care being taken that the playground, even in the most inclement weather, will be dry and comfortable for the pupils after their exhaustive labours in the schoolroom. The building is two-storied, and is a handsome structure of stone, with red dressings for the windows and doors, thereby relieving the plastered stonework of the building. The design was suggested by the Most Rev. Dr. Sheehan, Lord Bishop, who has taken, from the beginning, the most warm interest in the erection of this school. On entering, one is surprised to find a beautifully tiled floor, which at once gives the passage a bright, cheerful, and neat aspect. On the ground floor there is a large infant schoolroom, which leads into a class-room, for infants also. This room is very effectively lighted, it has a cheery and bright appearance, with the old monotony of the schoolroom replaced by every modern equipment to rob the room of its dull appearance. The desks are most comfortably designed. In this room children are pleasantly trained according to the kindergarten system, in a combination of knowledge and practice of the most elementary subjects. On the second storey there is a similar schoolroom and class-room for the more advanced pupils. Both schoolrooms and class-rooms are heated by the ordinary coal fire, which, for schools of their capacity, gives the most comfortable and satisfactory heating.

Additions to the Convent of the Little Sisters of the Poor are to be shortly begun. Mr. W. H. Byrne, of Dublin, is the architect, and Mr. D. W. Morris, the surveyor.



Bray—THE PROMENADE PIER.—A WRIT IS QUESTION.—We understand that Mr. Isaacs, one of the chief members of the Promenade Pier Syndicate, has served a writ, or is about to serve one on Mr. J. E. McCormick, U.D.C., for £2,500, being the amount lodged as *bona fides* in respect of the pier and tram scheme for Bray. It will be remembered that Mr. McCormick, as Chairman of the Board then, was appointed joint trustee with Mr. Molloy, solicitor, for the money.

THE NEW RAILWAY AND TRAM SCHEME FOR BRAY AND ENNISKERRY.—At the Town Hall, Bray, Mr. James Dillon, M.In.C.E., opened an inquiry into the merits of the proposal of the promoters of the Dublin, Bray, and Enniskerry Light Railway or Tramway scheme from an engineering point of view.

Cork—At the meeting of the Cork County Council, the proposed railway to Ballycotton and Castletownbere was approved of.

On January 23, tenders were received for the erection of a stone bridge across the south channel of the river Lee in connection with the new road in course of construction between the Western Road and College Road, Cork. Messrs. W. H. Hill and Son, engineers, 28 South Mall, Cork.

Dunshaughlin—Messrs. A. Scott & Sons, Drogheda, have been appointed to design a water supply and sewerage scheme for the town of Dunshaughlin.

Naas—The Council will consider tenders for sundry works comprising the town waterworks extension, re-fixing of pump engine, etc. Mr. T. Bergin, B.E., is the engineer.

Newtownards—The Newtownards Rural District Council invite "tenders" for the preparation of plans and estimates for a water supply and sewerage system for the town of Donaghadee.

Rathdown—THE DRAINAGE.—Messrs. Kaye Parry and Ross wrote refusing to accept the sum of £30 in settlement of their claim of £49 10s. 10d., in respect of the Workhouse drainage scheme. They mentioned that they had several interviews with the Guardians on the subject.

Shoreditch (London)—A Day School for boys who propose to enter some branch of the cabinet-making, joinery, or other wood-working trades will be opened in the L.C.C. Shoreditch Technical Institute on Tuesday next. The Institute is thoroughly well equipped with class-rooms, drawing offices, art studios, and shops for cabinet-making and manual training in woodwork, carving, upholstery, polishing, and other branches of the furniture trades, while laboratories for physics and experimental mechanics, and for practical chemistry are being provided, and will be completely equipped in the course of a few months. The school is open to boys who are capable of doing the work of Standard VII. The fee is £1 10s. a year, but the Board reserves the right to remit the fees in whole or in part in the case of boys whose parents are in receipt of not more than £2 a week. Further particulars may be obtained from Mr. S. Hicks, the Secretary of the Institute, Pitfield-street, Hoxton, N.

Waterford—THE CENTRAL STATION, WATERFORD.—Much discussion has taken place locally since we intimated that the Great Southern and Western Railway Company intended building a great central station at the north side of the river. The great bulk of the citizens say—"Why not the south side? The bridge to us would be saved. It would be more convenient to everyone, and, if eventually the Tra-

more Railway Company fished into the net, as is more than probable, a fine station could be built, say, about Parnell-street." These views, no doubt, will be very fully considered by the G. S. and W. Railway Company before they make any definite move. Certainly, a great central station in the heart of the city would, from the average Waterford man's point of view, be a very desired consummation.

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LAW CASES.

THE EMPLOYERS' LIABILITY ACT.

This was an action in which plaintiff, Elizabeth Quinn, sought, under the Employers' Liability Act, to recover damages in respect of the loss she sustained by the death of her husband, Patrick Quinn, through the alleged negligence of defendant. It appeared that plaintiff's husband had been employed by defendant as a scaffolder, and in November last, while engaged in building operations by defendant at the Phoenix Park Distillery, Chapelizod, he lost his life by an accident.

Mr. T. Smith (instructed by Mr. Gerald Byrne) appeared for the applicant.

Mr. R. C. K. Wilson (instructed by Mr. Mathew Good) appeared for Mr. Langley.

The evidence was to the effect that at the time of the accident certain windows on the third floor of the building, which had been bricked up, were being re-opened for the purpose of letting in the ends of beams, on which an outside scaffolding was to be supported. The beams were to rest on the sills of the windows.

Two fellow-workmen of deceased were called, and their statements were that the deceased was knocking out bricks from one of the bricked-up windows in the same way in which he had already opened others with safety, when the bricks fell on him and knocked him to the floor of the second storey, killing him almost immediately.

Mr. Henry Lundy, the architect, was examined for the defence, and stated that he was at the window in question just before the accident, and seeing the way in which the deceased was knocking out the bricks, told him not to do so, but to remove them, one by one, from the top. The deceased, in a rough manner, refused to carry out the directions of witness, saying that he would do as he had done with the other windows, and went on striking another brick. Witness then turned away to go and speak to the foreman about it, and at that moment the bricks from the window fell in with a crash on deceased.

A workman named Coyle gave evidence in corroboration of the statements of Mr. Lundy.

The Recorder, in dismissing the application, said the man disobeyed an order given him at the moment, and in disobeying it he lost his life. His lordship condemned the practice of bringing out workmen and giving them drink, and said it appeared in the case that the "gaffer" of the deceased had brought him out to drink, and although that did not make him unable to do his work, it put him into a petulant disposition, which made him give a rough answer to his superior, who was desiring him what to do for his own safety. He (the Recorder) should hold that the action of deceased amounted to serious and wilful misconduct within the statute.

DAMAGES FOR PERSONAL INJURIES.

The Recorder sat in the Court House, Green-street, Dublin, on January 17th, and re-umed the business of the City Sessions. The case of D'Arcy v. McNeill was a claim under the Employers' Liability Act to recover damages for personal injuries sustained by the plaintiff, a wood-cutter, by reason of defective machinery in the defendant's sawmills at Ringsend Dock. The plaintiff had been originally employed at the polishing machine, and was then put on the circular saw. He alleged that he had no previous knowledge of how to work the saw. In consequence of the guard not being on the saw, his hand got entangled in the machinery, and his thumb was cut off. He had got half-pay since the accident. The Recorder, having heard the evidence, considered it was a case of pure accident, and dismissed the action, allowing the plaintiff 4s. 6d. per week until further on.

THE BUILDING STONES AND MARBLES OF IRELAND.

Early Irish Stonework.

There are few branches of native Irish industries, that are more capable of great development at the present time than those in connection with stone. The first and oldest examples of work in stone in Ireland are the curious cairns and cromlechs freely scattered all over the country. They are huge boulders, weighing several tons, which were taken in a state of nature and lifted into positions on smaller blocks of the same material, probably by the herculean labours of a large number of men. These huge blocks of unheven stone are believed to have been used to mark the last resting place of some greeking or chieftain; some have surfaces highly polished, as if by blocks of ice gliding over them during the glacial period.

The crudest forms of work in stone to be found in Ireland are believed to date back to a period before the Christian era, and to come down to the fourth and fifth centuries. Previous to the end of this period the uses of adhesive materials of the nature of mortar and cement are believed to have been quite unknown. One of the most remarkable specimens of this work is at Dun Aengus, in the Isles of Aran, on the West Coast of Ireland. Dr. Petrie and other learned antiquarians have drawn attention to the marvellously fine construction of the walls of these forts of the pagan Gaels, erected centuries ago, at a period when cemented and tool-dressed masonry were alike unknown. Without mortar of any kind, these enormous and close-fitting masses have been erected so skillfully as to enable them to resist the storms, the rains, and the snows of many centuries. The exact age of some of these great pre-historic structures is not known with any degree of exactitude, but it is credibly stated that the huge fort alluded to is fully 2,000 years old. The very crudest tools were used in the work of quarrying and dressing the blocks of stone. M. Viollet de Duc, the eminent French architect and antiquarian, states that he considers that levers of wood, hardened by fire, were used for forcing up the stones below the surface of the ground. Mr. George Wilkinson, a well-known authority on Irish architecture, is of the opinion that such primitive tools must have been superseded by iron by the time when the stones were quarried for these ancient Irish forts. However this may be, there are no marks of masons' implements to be detected on the stones in position, not even the rude mortise and tenon joints found in the Stonehenge remains.

Ireland abounds in marvellous buildings of stone, dating back from the very earliest ages, which have always excited the warmest admiration of the antiquarians who have visited the country. It is a remarkable fact that neither in Greece nor in Italy is the so-called cyclopean or polygonal form of construction ever found, except where the hard limestone, which forms the framework of both countries, supplied the materials close at hand. Among the earliest architectural remains found at Hissarlik by Schliemann, the walls, though of massive construction so far as their thickness and solidity are concerned, have no resemblance to cyclopean structures, but are composed of stones of moderate size with the interstices filled with clay. This may be due to the fact that the soft tertiary limestone of the hill of Hissarlik is totally unsuited to such massive work; and in Ireland it is perhaps possible that the art of stone-building arose in certain districts from the very abundance of stone and scarcity of earth; while in other places, where stones were not available without quarrying, earthen forts and embankments are found.

The opinion of those who have studied the ancient rude stone and the cement-built churches of Ireland is, that the period between the sixth and the ninth centuries there was one of steady progress from very rude beginnings.

Limestone Excellent and Abundant.

The industry of quarrying, dressing, and preparing stone for building, architectural, and sculptural purposes is one of the most ancient in Ireland, and one that at the present time is capable of very great development. Some of the best lime-

stone in the world, both for building and sculptural purposes is obtainable all over Ireland. The Ballinasloe district abounds in limestone of the very best quality; it is also found in abundance in Armagh, Kilkenny, Tipperary, Kerry, Cork, etc., etc., in the Drogheda district, and the County Carlow. In the department of sculptural art, limestone is considered one of the best materials for figure carving and monumental work on account of its durability and of the ease of bold treatment. There are several very handsome monuments and pieces of statuary that have been fashioned from this stone in various parts of Ireland during the past eighteen months, which fully prove its qualities. Irish limestone, being so exceedingly tough and hard, is very difficult and costly to work. Hence small, elaborate work and "finnicking" detail is out of place; probably this accounts for the peculiarly severe character of most of our limestone buildings. Irish limestone is about the finest building material in the world. Most Irish limestones polish beautifully.

Granite Rich and Plentiful.

For general building purposes granite is largely used, and this stone can be quarried in various parts of Ireland, notably in the counties of Wicklow, Down, Donegal, and Dublin. It is obtainable in every shade of white, grey, and red, and of the finest quality. Wicklow granite is the softest, and it lends itself admirably to architectural treatment; the other granites are harder and more expensive to work, but will take the very finest polish. The Newry quarries are considered among the best worked in Ireland; and from them all the granite for the platform steps and pedestals of the colossal Albert Memorial, in London, was supplied. The tons of cut stone required for the great monument to the Prince Consort in Hyde Park came from Ireland, and a great deal of the sculptural work was done by Irish hands. There are fine red granites to be obtained in Donegal, but the lack of rail way communication and the cost and difficulty of transport largely close the markets in England and Ireland to these quarries. Motor cars or traction engines might solve the transit difficulty, and provide much-needed employment in this district.

Sandstones Rather Hard.

The sandstones of Ireland are rather hard, and consequently more expensive to work than either the Scottish or English varieties of this material. However, at Dungannon, Mount Charles, and Clonaslee most excellent specimens are quarried. Fine examples of this stone used as a building material may be seen in the new Science and Art Museum and the National Library, Kildare-street, Dublin. Also in the Royal University, the Medical School, T.C.D. Some of the Mount Charles stone has failed badly in the new museum, and it is a fact, we believe, that the quarry is practically worked out, as far as concerns supplying any large quantities.

Tipperary has a good sandstone quarry at Drombane, near Borrisoleigh. The fine courthouse at Nenagh was built of this stone some forty years ago, but a few years since it failed in the projecting parts, and had to be cut out and re-placed by Portland stone. This was attributed to the action of frost.

Most of the ancient Celtic crosses are of sandstone. It is an entirely unaccountable fact that Irish sandstone quarries which are very plentiful, are much neglected and badly worked. Sir T. Drew, R.H.A., is at present using a fine local sandstone in the construction of the new Episcopalian Cathedral in Belfast; but is using Douling stone, from Stoke-under-Ham, Somersetshire, a very durable oolitic limestone for dressings. This stone is also being used in conjunction with Scrabo (local) sandstone at the new R.C. Church at Ardoyne, Belfast. Irish sandstones possess warmth of colour and beauty, but their hardness renders them a little costly to work.

Marbles Exhaustless and Beautiful.

In marble, Ireland is very rich indeed, and beautiful varieties of every colour and shade of this choice material are quarried in different parts of the island. There are lovely

specimens of grey, pink, red, green, black, and even white marbles found in different parts of the country. Most of them are of the most admirable quality, and take the very finest polish.

Ireland possesses several most valuable deposits of marble, but the trade has always had considerable difficulties in its way. Half a century ago the importation of marble into England and Scotland was practically prohibited by a duty of two shillings a cubic foot. At present the trade is crippled also by the lack of railway facilities, and even where they exist the carriage rates are so high as to seriously interfere with the industry. The Kilkenny marble has been famous for centuries. It is very close in grain, and takes a high polish. Some of it is pure black, and shines when polished; like ebony some has a black ground, beautifully marked with a variety of fossils. There are great quantities of this marble obtainable in large blocks in quarries but from one to five miles from the city, and also a dark grey fossil marble, very sound and uniform in colour. The marble sawing mills there have the distinction of being the first established in Great Britain. The saws are worked by water power, originally set up in the year 1730; and have been constantly at work on the banks of the Nore ever since.

The great drawbacks to the general development of the stone industries of Ireland are, first of all, the crude methods of quarrying; secondly, the apathy of the quarry owners; and third, by the great cost of transit. Some of the owners are farmers, and will only quarry when it suits them, or in idle times after the harvest. The result is that it is not always easy to tell when the stone will be delivered. Such an unbusinesslike system of course does damage to the industry, as pressing work will not brook delay and uncertainty of this sort. An entirely new method of sawing marble has been introduced in Belgium during the last few years. Instead of blades of iron, an endless cord, composed of twisted wires, revolving with a rotary and forward movement of great velocity, cuts the marble with the aid of sand and water. It does its work quickly, and is especially suited for use in quarries. The marble that is quarried by this means is, of course, free from shakes, or the cracks caused by wedging and blasting, and is therefore sounder and more valuable as material for the sculptor. The machine reduces considerably the cost of turning out stone from the quarries, and it is thus the means of enabling marble to be delivered at prices that will defy foreign competition.

In Cork several fine varieties of marble are found. Victoria red, a variegated, mottled variety; brownish red, red, and dark red mottled marble. All these varieties are beautiful, and take a high polish. Limerick marbles were once extensively used, but are now but little heard of in trade circles. Galway is very rich in marbles, but want of railways severely handicaps the trade. For instance, there is a very fine green marble to be found near Clifden, which will fetch a high price even in London if the demand could be supplied. Unless the marble is shipped at Clifden, the only alternative is to cart it over fifty miles of road to the nearest railway station at Galway. There are other coloured marbles in Galway, of green, black, and grey hues, and of the finest qualities. Some of the green Connemara marbles are now so costly as to be sold by weight instead of by the cubic foot. Some leading Dublin sculptors have had to pay as much as 70s. per cwt. for the best quality. There is also a beautiful translucent green marble, sold by the pound to jewellers, who cut it into little slabs of $\frac{1}{2}$ -in. or so in thickness, and work it up into ornaments for dog-ogork jewellery, silver ornaments, etc.

Why Not Develop the Irish Quarries?

Quarries containing marbles of these rare qualities might be made small gold mines by the exercise of a little industry and enterprise. In trade circles in Dublin complaints are freely made that "our quarries are very badly worked at present!" One experienced sculptor stated in the course of a conversation that "most were now worked after the primitive methods of a thousand years ago!" Better methods, improved appliances, and cheaper and readier means of transit are very necessary, if, in this industry, Ireland is to keep pace with the other nations in Europe.

SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp. Excavator and Bricklayer.

(Continued.)

Where cement and sand are specified to be. **Cement and Sand.** Used, the mixing, which is to be done on a clean board or stone flag, and in small quantities as required for use, is to be in the proportion of one of cement to two of sand (except where otherwise described). No chopping up and using cement which has begun to set will be permitted.

The bricks to be Kingscourt; those for external facings to be pressed and those for inside work to be wire cut, or such other bricks of equal quality as may be approved.

Bricks. The moulded bricks to be of such stock patterns as may be selected.

The whole of the bricks are to be new, sound, well burnt kiln of proper shape, uniform size for proper bond, and with sharp arrises, and uniform colour for external facings.

Brickwork. The walls and chimneys are to be built when practicable in English bond.

False headers are not to be used; whole bricks only will be allowed, except when absolutely necessary for proper bonding. Bricks are to be well wetted before being laid.

Brickwork to have all joints well flushed up at every course. Every four courses of brickwork to gauge 12' in height, but in no case exceed 1' in addition to the four courses if laid dry.

In the case of brickwork in cement (and other brickwork is so ordered) the course last laid to be well wetted when bedding fresh bricks upon it.

The walls are to be carried up regularly, so that no part be left more than 3 feet lower, or built more than 3 feet higher, than the adjoining walls.

The division walls are to be carried up with, and properly bonded with, the main walls.

Brickwork, space left in. Unless where absolutely necessary for the safety of the building, beams or timbers are not to be pinned in close, but an air space of $\frac{1}{2}$ " wide at the sides and back is to be left where directed.

Apertures for the passage of pipes, ventilators, bolts, etc., are to be left where required in the walls and made good to after fixing the same.

Chimney Stacks. All chimney stacks above the roof plate level, piers to windows, plinth, and over-sailing courses at eaves, etc., to be built in cement and sand, the joints raked out, and pointed to match the face work.

Damp Course. Two courses of external and internal walls of main building to be built in cement as a damp course, 6" above the finished ground level.

Corbel Courses. All corbel courses to be built in cement. To be picked of uniform colour, and for a depth of 2" at least from the face, to be added and jointed in dark mortar of approved colour, and finished with a neat joint.

Facings of External Walls. The horizontal joints to be struck back on the upper edge, so as to form a weathering, and the vertical joints are to be left flat jointed, and cut on both edges.

Internal Arches to Door, Window or other Openings. To be rough axed arches in two half brick rings, set in cement and sand.

Arches over Chimney Openings. Turn relieving arches in cement over all chimney openings and insert chimney bar, as provided in Smith.

Concrete Fixing Blocks. Provide and build in a sufficient number of breeze concrete fixing blocks, 9" x 4½ x 3" for fixing joiner's work.

Broken Brick Filling to Fenders. Fill in all fenders with broken bricks, well rammed, and of the depth required.

Cement Filleting. Run cement fillet to all large courses, and wherever else required.

(To be continued.)

OUR BELFAST LETTER.

(FROM OUR OWN CORRESPONDENT.)

The Assembly Hall Competition.

It is late in the day to mention this subject, but I have just a valedictory word to say, and then I shall pass from it for ever—I hope. Nothing in life is so supremely amusing, I think, as the solemn way in which normally sensible men will meet in associations and institutes, and don the motley of the fool. In comparison with their rich ridiculousness, Bottom, with his ass's head, is a mere lifeless dummy. I refer, of course, to the learned findings—published in the last issue of the IRISH BUILDER—of those two magnificent bodies—the Royal Institute of British Architects, and the Royal Institute of the Architects of Ireland—to their findings on the matter of the Belfast competition. Why, they cannot even draft their findings—or resolutions (defend the word!)—grammatically; but use language for which a fifth-class National School boy would be whipp'd. "The Council consider the proper course to have been adopted was either to have given, etc.," and the value of the resolutions is on a par with their grammar. In the conduct of this competition the Council of the R.I.B.A., at least, had an excellent chance of exercising disciplinary power, an opportunity of which they have made no use whatever.

The New Association.

The competition, however, has had one good result, and ever, has had a good result, likely to eventuate well, and that is the taking of preliminary steps to form a local Architectural Society in alliance with the Irish Institute. While, as above implied, I have little faith in such societies, I yet think that this one will be productive of great good, if only because it has been initiated, and will probably be dominated, by a few competent men thoroughly in earnest. At the outset, the choice lay between inviting a general meeting of architects to discuss the matter, and the simple formation of a branch of the Irish Institute by members of it residing here. The latter, and wiser, course was adopted. In consequence, a deputation went to Dublin, and, after having been hospitably entertained to lunch by Sir Thomas Drew, met representatives of the R.I.A.I., with the result that matters are proceeding satisfactorily apace. Only two names of those comprising the deputation were given in the last issue of the IRISH BUILDER, but it is right that all should be credited. So I give the full list here:—W. J. Gilliland, M.R.I.A.I.; Vincent Craig, F.R.I.B.A.; F. H. Tulloch, A.R.I.B.A.; N. Fitzsimons, A.R.I.B.A., and J. C. Dewhurst, A.R.I.B.A. And it is only right to add that the real initiator of the whole movement is Mr. Dewhurst, who was the first to make a move towards approaching his colleagues.

The Superintendship of Works.

There was much disappointment that some local man did not get this appointment, as, undoubtedly, some thoroughly competent local men were entrants. But it is a case with the Belfast Corporation, as elsewhere, of, no Irishman need apply. The last three principal appointments made were all given to Englishmen, namely, the Principalship of the Technical School (£500 a year), the City Accountancy (£600 a year), and now, the Superintendship of Works (£500 a year). In the case of two of these appointments, there were local candidates undeniably as capable and qualified as the winners, and it seems a pity that a prophet should be so damned in his own country. We shall soon not have an official in the Town Hall who is not English. Of course, it can be said, in retaliation, that we Irishmen out the Englishman from the highest posts in his own country. So, I suppose, his invasion of us is only a poetic justice.

Some of the entrants for the Superintendship of Works were very amusing. I was privileged to see the list. One man based his claim on the fact that he was "an artist who had studied in the best studies of Paris and Great Britain!"

Donaghadee Sewerage.

The Newtownards Urban Council advertised for an engineer "to prepare plans, specifications, and estimates for a Water Supply and Sewerage System for Donaghadee." Persons tendering to state their charge for the preparation of plans, etc., and also the rate per cent required for superintendence. Proposals to be in by 9th February, 1901.

General Building.

There is a regular slump in the general building trades at present. The majority of the architects are engaged in that unfascinating pastime known as biting their thumbs, and trying to get the debtors on their books to pay up. The carpenters' strike shows no signs of being over, and as they meet on the pavement in front of the IRISH BUILDER Office here, I find considerable difficulty in getting in o' mornings.

Our New Lord Mayor.

Our outgoing Lord Mayor (Sir Robert J. McConnell, Bart.) is one of the largest property owners and estate developers in the city of Belfast, and our incoming Lord Mayor (Sir Daniel Dixon) is senior partner in the firm of Thos. Dixon and Co., perhaps the largest firm of timber and slate merchants, joinery manufacturers, etc., in Belfast. So the building trades are getting their fair share of municipal honours at present.

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It seems a pity that huge tracts of land in the United Kingdom should lie idle, while the demand for British timber is steadily growing. This subject has been alluded to in an article in the *New Century Review*, which, however, is quite aware of the difficulties lying in the way of afforestation. One of the chief arguments against planting trees is that men do not care to spend money entirely on behalf of future generations. Before doing so they want to be assured that the result of their enterprise will be an asset which they may reckon as sure and certain, just like bricks and mortar, although, like some other real property, it may not be quite realisable. There is reason to doubt whether private enterprise can find sufficient inducement to be encouraged to undertakings of this sort, although, on the other hand, it must be acknowledged that, despite the war, money is still fairly plentiful and cheap. Work of this sort should be done in Great Britain, as in other countries, by the State. It has been pointed out over and over again that the climatic conditions of Norway and Sweden are no more agreeable to tree growth than our own, yet these countries have over sixty-seven million acres under forest, and export to Great Britain between three and four million loads annually. In Germany and France prudence is also shown in developing this source of wealth; and remembering the shortening of the coal supply, which the experts regard as inevitable, prudence would seem to suggest care in this matter.

Glasgow—STRIKE OF JOINERS.—In consequence of an intimation by the Glasgow master joiners of a reduction in wages of 1d. per head, nearly a thousand of the operatives went on strike. Altogether there are about four thousand joiners employed in Glasgow and district, and the strikers, at a meeting in the afternoon, resolved to take steps to bring out the whole trade, and to resist the reduction to the uttermost. They assert that the action of the employers is a breach of the existing agreement, which does not terminate till April. The employers also held a meeting, and resolved to adhere to their intimation.

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Admiralty.—Mr. G. Hevey, of Belfast has been one of the successful candidates at the recent examination for Assistant Civil Engineers in the Admiralty Works Department.

PROPOSED BRANCH OF THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND IN BELFAST.

A meeting of the architects of Belfast was held at the Town Hall recently for the purpose of considering the advisability of forming a branch of the Royal Institute of Architects, Ireland. There was a good attendance, which included Sir Thomas Drew, P.R.I.A.I., F.R.I.B.A., and Mr. W. Kaye-Parry, honorary secretary, R.I.A.I.

On the motion of Mr. Close, seconded by Mr. J. C. Lep- per, Sir Thomas Drew was moved to the chair.

Mr. W. Kaye-Parry here read the circular which he had addressed to the members of the profession.

It was agreed that Mr. Fitzsimmons be appointed secretary of that meeting.

The Chairman, in giving a statement of the objects of that meeting, said that as a native of Belfast, he was pretty well aware of the difficulties to be met in the formation of a co-operative society. His forty years' experience in Dublin had also taught him the enormous advantages and good fellowship which was engendered by cohesion amongst the members of the profession. He had heard it said that it would be impossible to form a cohesive society in Belfast. He was perfectly well aware of the difficulties, but he thought those difficulties were not insuperable. (Hear, hear.) One of the great difficulties in bringing about unanimity of practice in the city was the question of fees. He knew the position in Belfast was very different from that in many other towns, and differed *in toto* in respect to the class of buildings to be erected. There were buildings here of the warehouse class, and rows of houses in a growing town, and it was unjust and unreasonable to lay down a hard and fast scale of fees. Sir Thomas then went on to speak of the unsatisfactory condition of affairs amongst the architects when he first went to Dublin. There was little cohesion, and the members had very old-fashioned and evil notions, but since that time a better state of things had been brought about. Instead of the proper percentage being paid to architects, half, and sometimes less, was paid, but since that time the old system had died out, and now the architects were working together on terms of the most perfect harmony and understanding. There was no architect who was in any difficulty but the other members of his profession came around him and supported him. He was quite sure that that society would strengthen all its members by co-operation, but he did not think at present there should be any very stringent rules laid down as to professional conduct in the way of declaration. The circumstances of Belfast were peculiar, and required deep consideration, and he was sure that they would not make their obligations in any way onerous, to deter architects from joining the society. It was quite premature as yet to ask intending members to be members of the institute in Dublin, but in many ways it was desirable that the local society should be affiliated to that institute. It should be open to their members to become members of that institute or not, just as they chose, just as their society would join with the British Architects' Society. Their society would be simply to watch over the interests of all architects. (Applause.)

Mr. W. J. Fennell, M.R.I.A.I., moved the following resolution:—"That, having regard to the lack of organisation of the architectural profession in Ulster, it is desirable that an association be formed, having for its objects the promotion of union and professional integrity amongst its members, the establishment, as far as possible, of uniformity of practice, and the general advancement of architecture; to consist of Fellows and Associates of the Royal Institute of British Architects, and members of the Royal Institute of Architects, Ireland, together with such other competent members of the profession as may desire admission, and be elected subsequently under a constitution and bye-laws, which shall be framed by a council elected for that purpose, and approved of by a majority of the members; that the constitution and bye-laws be subject to the approval of the Royal

Institute of Architects, Ireland, and the association so formed be affiliated thereto, and have official representation on its council." After expressing his pleasure in being asked to fulfil that duty he said there was no organisation at all in Belfast, and he thought it was a step in the right direction to form one. The objects were, first, the promotion of union, and in regard to that he thought there was exceedingly little union among architects in Belfast. At any rate, he had seen very little of it in his twenty-five years' experience. In reference to professional integrity, he thought that the members of the profession in the city were as upright and high-minded as in any other place. He considered that uniformity of practice was the cardinal point, and the whole thing meant five per cent., although, at the same time, he agreed that the practice in Belfast was very different from that in other towns and cities. The last paragraph was a most important one, and it was to the effect that their branch must be affiliated to the Royal Institute of Ireland, and have representation on the council. That he considered most important. Such action would lead to a better and higher standard of practice, and it would be of great benefit to the members of the profession in Belfast and to the general public. (Applause.)

Mr. J. Gilliland seconded the motion, and said the necessity was great, because London was very far away, and Dublin not very near. It was impossible for the members to keep in touch with those centres, and as those centres had no local knowledge it was necessary to deal with local questions and to discuss matters among themselves. Union in Belfast had been conspicuous by its absence, and di-union would be the more proper term to apply to it. He was not quite sure about the integrity of architects of Belfast, because he understood that the members of the profession took less than the recognised percentage. At the same time, he believed very little was done in the way of taking illicit commissions.

Mr. W. Kaye-Parry felt it a great honour to be permitted to support the resolution, and to be associated with the movement inaugurated that day. He wished to point out three reasons why architects should join that society, and these were gained by his personal experience in Dublin. The first was because the association was the best substitute at the present time in the nature of registration. They had no statutory position and no diploma to get before they could practise. The second was that it was invaluable as a court of appeal. He had a personal experience of that, and could speak of it in the highest terms. He did not think the least advantage of the three was the promotion of a better feeling and a better spirit among practical architects in our city, and this could be got in no other way.

This resolution was cordially adopted.

Mr. S. P. Close moved—"That a provisional committee be elected to prepare a scheme and report to a general meeting, correspond with the Royal Institute of Architects, Ireland, and take such other steps as it may consider desirable to promote the interests of the proposed association; that the following be the provisional committee: Vincent Craig, F.R.I.B.A.; J. J. McDonnell, J.P., M.R.I.A.I.; Frederick H. Tulloch, A.R.I.B.A.; William J. Gilliland, M.R.I.A.I.; John C. Dewhurst, A.R.I.B.A.; Nicholas Fitzsimmons, M.R.I.A.I., secretary and convener."

Mr. G. W. Crowe seconded, and pointed out the great advantages which their clients (the public) would gain from the formation of that society. (Hear, hear.) The mere fact of being a member of the society would be a hall mark and a guarantee of the competence of the architect.

This motion was also carried unanimously.

Mr. Jas. St. J. Phillips moved—"That this meeting hereby expresses its cordial approval of the resolution passed by the council of the Royal Institute of Architects, Ireland, at its meeting of the 7th inst., as follows:—"The council of the Royal Institute of Architects of Ireland, having had the result of the Presbyterian Assembly Hall, competition, Belfast, brought before them, are of opinion that the conduct of the Competition Committee in not following the usual proper course of publishing the report of their assessors (which they understand was an open document), and in

appointing, as architects to the new building, the firm who drew up the original very unsatisfactory conditions, is deserving of their condemnation as being absolutely opposed to the methods which should govern all fair and impartially conducted competitions. The council considered the proper course for the committee to have adopted was either to have given the work to the gentleman placed first by the assessor, in conjunction with a consulting architect of experience, or else to have invited a fresh competition with more satisfactory conditions than the previous one." (Hear, hear.) The speaker added that the newspapers had given publicity to certain matters appertaining to the competition.

Mr. Nicholas Fitzsimons seconded the motion.

The Chairman, in putting the resolution to the meeting, said he could not do so, as the assessor of the competition referred to, without making some observation. The model in question was impossible, unsatisfactory, and distasteful, as were so many of the competitions in Belfast. There have been many competitions in Belfast which had been most unsatisfactory, and, indeed, he did not think he had ever heard of any satisfactory competitions taking place in Belfast. (Laughter.) He thought, perhaps, the last competition was the straw that broke the camel's back.

The resolution, upon being put to the meeting, was adopted.

OUR ILLUSTRATIONS.

Sketch from the design of Sir Thomas Drew, P.R.H.A., for the completion of the Campanile of the King's Hospital, Dublin, better known as the Bluecoat School.

Says *Irish Blue*, the College chronicler:—"Strangers often ask themselves what hurricane or earthquake had shattered the Hellenic columns, and reminded of things in Athens or Baalbec, and have been mildly surprised when told—Hibernically—that it is a ruin, because it was always so. It was in the original design intended to be the crowning of the beautiful work of which the first stone was laid by Earl Harcourt, then Lord Lieutenant, in June, 1773. All else was completed long before the nineteenth century began; but the builders would seem to have been seized with the revolutionary sentiments of the day, for they left the crown as mutilated as that of poor Louis XVI.

"It has so long been left thus that the glamour of myth and legend has long since mingled with the air around it, as over so many other ruins in our sacred isle. One tells of how it once was a fair temple, in which was enshrined a marble statue of the founder, King Charles II., but that this was shattered in the great storm of 1839. Another adds that, in the crash, the fragments were forced down far beneath the regular foundations, where King Charles II. still lies uninjured, waiting for some future Schliemann to unearth him, like Agamemnon. This last is fully believed by many of the poor people in the neighbourhood. The most plausible story is, that the Governors from age to age were influenced by an original tradition that the whole building would fall whenever it should be fully completed, and so have deferred acting on the policy of the authorities of the great Cathedral of Cologne.

"The Governors in the past often wished to find a remedy; but as the school is maintained on its own endowments, without any public grants, the whole income has been absorbed by the actual necessities of maintenance from year to year. Of late, however, architects have advised that the unfinished fabric is not only unsightly, but not free from danger; and this has given the present governors the desired impulse to seriously take in hand what so often has been projected, but in vain. Many of them think, and think wisely, that the expense, which must reach £1,200, should be defrayed, as far as possible, without trenching on the annual income of the hospital. Several of them have promised liberal contributions, conditional on the raising of the whole fund necessary to carry out the design which the governors have obtained from the President of the Royal Hibernian Academy, Sir Thomas Drew, which is handsome, yet not too pretentious, whilst it harmonises with the original conceptions of the architect of a century

and a quarter ago. The fate of the sale of the Sybiline Books has followed the past delay. Very few hundred pounds would have sufficed for the completion of the design when it was already half finished. Very little more would have been requisite in the earlier half of the passing century. The expense of building is now at least four times greater than it was when this Cupola began. What will it be in 1909? Time and gravitation will, however, have then long settled the question if this continuing dilapidation be not soon effectively dealt with."

We are indebted to the courtesy of the Editor of *Irish Blue* for a loan of the block of this sketch.

THE NEW CATHEDRAL, BELFAST.

The drawing, which we publish as a supplement, is a study by Sir Thomas Drew, P.R.H.A., for the west front of the new cathedral church for Belfast. It is only a tentative design, as no final determination has been arrived at in regard to the treatment, notwithstanding that progress has already been made with the erection of the first section of the church, for which Messrs. Lavery and Sons, of Belfast, are the contractors.

The drawing is of considerable interest, because, in the first place, it is from the hand of the author of the design himself, rather an unusual circumstance in these days, when it is becoming, unfortunately, more and more rare for the architect to make his own perspectives and studies, a class of work which is fast drifting into the hands of specialists.

The study is also notable as marking the most modern tendency in church design. Many designers feel that a Gothic treatment hampers them in fulfilling the great congregational requirements of towns in the present day, and a purely renaissance treatment is, as a rule, not acceptable.

Sir Thomas Drew's first design for the Belfast cathedral was a finely dignified rendering of a conventional design in the middle pointed period of Gothic, but circumstances induced him to make an entirely new design based on Romanesque basilican types—sturdy in its adaptation of the older manner, but made conformable to modern notions of refinement of detail by the strongly marked classical feeling which pervades the design. Both the first and second designs have already been fully illustrated in our pages.

SIR THOMAS DREW, P.R.H.A., PRESIDENT OF THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

Our illustration is from a photograph by Mr. Geohegan of the portrait by Walter Osborne, R.H.A., and exhibited at the Royal Hibernian Academy.

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Demolishing a Tall Chimney.—Reconstruction and extension of the old gasworks in Duddleston Park Road, Saltley, part of a work which is to cost in all £350,000, necessitated the removal of a tall chimney which was erected by the old private gas company, the Birmingham and Staffordshire, forty-four years ago. The chimney was 150ft. high, round in shape, with a square base 2ft. high, and tapering to a 6ft. circumference at the top. The contractors, Jefferies and Sons, Birmingham, commenced to demolish the chimney by hand, as they term it, but the bricks were practically useless for any other purpose after being thrown to the ground. After reducing the chimney 43ft. in this way, it was decided to fall the remaining 107ft. About 3ft. of the brickwork on the south side of the base was cut away, and as the bricks were removed the spaces were shored up with balks of timber, made inflammable with tar. A space of 110ft. was cleared in the works yard for the stack to fall on. Shavings were scattered under the tarred props, a light was applied to the shavings, and the workmen and spectators hurried away out of the line of probable fall. For just ten minutes the flames played round the wooden props, then the fire-weakened balks creaked, there was a rumbling sound, and the chimney tottered and fell exactly in the space provided for it. Hardly a brick was broken, and masses of the brickwork were not divided by the fall, showing how well bricklayers did their work forty years ago.



Sketch from the design of Sir THOMAS DREW,
P.R.H.A., for the completion of the Campanile,
King's Hospital, Dublin.

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4 4 per annum (postage paid). Subscriptions are payable in advance, and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street, Dublin.

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JANUARY 30, 1901.

No. 985.

THE PASSING OF THE VICTORIAN ERA.

A technical journal, devoting itself to professional and trade interests, has no concern with matters political, nor should elements sectarian, or even social, enter into its economy; yet the death of our beloved Queen has, during the past week, proved an event so overshadowing all others in importance and interest as to leave room for but little else in the public mind. The demise of Queen Victoria ends the great Victorian age, an epoch which, though to us bereft of the enhancing value of a perspective of years, yet appeals to all contemporary humanity as in every sense one of the most notable periods the world has ever seen.

In art and in science the progress made has been truly wonderful. When Queen Victoria ascended the throne, architecture was at a low ebb, cultured taste was, to a great extent, absent, the brief flicker of the Greek revival had passed, and the country was without an architecture of its own; a debased type of renaissance prevailed. Not many years later arose the great movement of "the Gothic revival," which, notwithstanding all its pedantries, has left its mark for all time upon modern architectural taste. The great project of building "the new Palace at Westminster," as it was called, or, as it is better known to us, "the Houses of Parliament," gave an opportunity for development of the revived taste for medieval architecture, and the influence of Pugin proved an impulse to the almost universal development of Gothic types. A school of architecture, which numbered amongst its lights such names as Butterfield, George Gilbert Scott, William Burges, George Edmund Street, and E. W. Goodwin, set the fashion for many a day. The influence of John Ruskin in letters and in art added much to the strength, enthusiasm, and singleness of purpose of those early days, and, for a time, the doctrines of the pre-Raphaelite School of Painters prevailed; through the influence and teachings of Rossetti, Holman Hunt, Millais, Ford, Maddox-Brown, and E. Burne-Jones, only to be superseded in latter years by a wholly different school of art, which found its ideal in a more or less general return to classical types of architecture and art in general. Of the painters, perhaps Leighton exemplifies this type better than any other; of the architects, many, like Bodley, Waterhouse, Philip Webb, Seddon, and others happily still amongst us, adhered, to a great extent, to the Gothic revivalist influence, whilst a still newer school of renaissance influence arose, and at this close of the great era its star seems in the ascendant.

In matters more practical, the gulf of years bridged between 1837 and 1901 finds the professions of engineering and architecture, the building trade, and the lot of the artisan and craftsman generally, enormously improved, socially, economically, and technically. Newer methods and time-saving appliances have contributed to greater comfort and affluence, and a higher ideal all round.

In the early days of the Queen's reign, railway engineering was still in its infancy; electrical engineering as a separate science, then scarce dream of, has made giant strides, till the close of the reign finds the country covered with a network of railway lines, the stage coach well nigh forgotten, and telegraphic and telephonic communication annihilating distance. Iron, steel, and aluminium have caused a revolution in construction, and the genius of Isambard Brunel in bridge building finds its antetype in the great work of the Forth Bridge, completed a few years since.

The great International Exhibition of 1852, due to the influence of Prince Consort, and soon followed by Dargan's Exhibition on Leinster Lawn, marked the beginning of a renewed interest and vitality in art, science, and culture, and since then progress has been steady and persistent.

The age of telegraphy began with the Queen's reign. The year in which Her Majesty ascended the Throne saw the first working electric telegraph in England. There had been inventors of telegraphs before, but it was in 1837 that Wheatstone and Cooke patented the magnetic needle telegraph, and set up a line between Euston Square and Camden Town. In the following year a telegraph line was installed on the Great Western Railway, and in 1851 a submarine telegraph cable was working between France and England. Since then Atlantic cables have been successfully laid, forming one of the great scientific achievements of the age, and the whole world has been bound together by cables under almost every sea. There is now a network of telegraph wires in every civilised country of the world, and the greatest crowning achievement in this department of science has been the "wireless telegraphy," brought to such perfection by Marconi. Indeed, the last year of the Victorian Era will be remembered for the marvellous attainment of communication between England and France without the aid of wires. Then, since Mr. Graham Bell took out his patent in 1876, the telephone has become a social and commercial institution, and has been the invaluable handmaid of the man of business. Sir Humphrey Davy discovered the electric arc light in 1810; it was not until 1857 that this form of illumination was really successful outside the laboratory, and until Mr. Edison invented the incandescent globe, electric lighting did not become remunerative, and, consequently, general. In recent years, too, the utilisation of electricity as a motive force has become common, and now we have electric railways, tramways, and machinery driven by "the magic current" in all civilised countries. It was in the year in which the Queen ascended the throne that the "Liverpool and Birmingham Grand Junction Railway" was opened. The locomotive was a novelty. Other departments of science and the industries of the nation have their tale of progress. Men have pushed ahead with science and art, with commerce and industry, and have troubled themselves little with philosophy and the moral sciences that were so dear to the hearts of our forefathers in the eighteenth, and early portion of the nineteenth, centuries. Education, primary, secondary and technical, has, on the whole, kept abreast of the requirements of the age.

Here, in Ireland, unhappily, we have not a like tale of unbroken progress to tell. The commencement of the Queen's reign found Ireland in possession of many industries she is bereft of. Dublin, once the centre of a flourishing iron trade, to-day imports almost every ounce of manufactured ironwork needed; the once busy iron factories, silk-weaving shops, shipbuilding yards, paper mills, and many another once affluent industry, are but memories. The dawn of the twentieth century finds our constructive industries, in a word, extinct, our art at a

low level, and nothing but the sanguine hope of a brighter era for trades and handicrafts renders the prospect tolerable.

How great is the change in the condition of the working classes, only those of advanced years can truly estimate by contrasting the experience of their early years with the latter-day conditions of life. Then, the working man—artisan, factory hand, collier, labourer, was but the slave of the capitalist; to-day, trades unionism, an extended franchise, and the spread of education, has made him the dominant consideration in all questions affecting prices and rates of production, with all the attendant results that belong thereto.

OURSELVES.

Since the beginning of the present year we have made a number of changes in the detail of the matter constituting this journal. We have added a page entitled "Topical Touches," in which we shall endeavour to give crisply items of interest to those connected with building and the allied arts and crafts. We have begun our illustrated interviews, and this present issue contains three separate inset supplements, and the paper itself is bigger than it ever was before. With all this we have reduced the price to one penny. Other and newer features will from time to time be introduced. Such special matters as electric lighting and traction, which hitherto the limitations of space have prevented our treating of adequately, will in the future have more justice done to them. In any case, it shall always be our constant aim to give good value. That our endeavours to please our readers have been fortunate enough to meet with some success is proved by the number of letters which have reached us, all showing the kindest of interest, and promising us support in our efforts to maintain a good class technical journal in Ireland—an appreciation which is gratifying and encouraging. We may be pardoned if we venture to quote the words of some of our good friends—our readers and our contemporaries.

An old and valued subscriber in Drogheda writes as follows:—

I have heard all about the recent changes in the IRISH BUILDER, and I warmly congratulate you on being its owners, and on the great improvement already in its first issue. I have at all times taken a great interest in the IRISH BUILDER, on account of its being the only technical journal in the country. *The issue I had this day far exceeds anything that I have seen as yet.* I shall be only too happy to do anything I can to help the IRISH BUILDER in getting both subscribers and advertisements, whenever and wherever I can.

Another correspondent says:—

Your reproduction gives just the soft effect of reality. Later on—now that I know that you can reproduce coloured drawings—I will send you a drawing of shops I am about to do.

The Waterford News says:—

The value is better than ever.

The Belfast Evening Telegraph says:—

This well-known paper, which is devoted to architecture, engineering, &c., has been purchased by the Irish Wheelman Publishing Co., and has consequently a new lease of life before it. While maintaining the former excellence, the price has been reduced from threepence to a penny, and new features will be added and the general tendency of the journal improved. The paper should be more popular than ever under its new management.

THE "IRISH BUILDER."

This old-established journal, now nearly half a century in existence, has recently, under new proprietorship, undergone extensive improvements. It has passed into the hands of the Irish Wheelman Co., Ltd., and the number now before us gives ample evidence of enterprise and intelligence in its management. The subjects to which it is specially devoted—viz., architecture, archaeology, engineering, sanitation, and arts and handicrafts—are treated of in a bright and attractive style. The printing is clear, and the illustrations admirable, whilst, at the same time, the price is reduced from 3d. to the popular 1d. This combination of cheapness and improved excellence must have the effect of greatly increasing the circulation.—*Freeman's Journal*, January 19, 1901.

Irish Figaro says:—

This old-established journal, dating from the year 1859, the only technical paper in Ireland, is now under the new and active management of the Irish Wheelman Printing and Publishing Co., Ltd. The price has been reduced from threepence to one penny, and the value is better than ever. It is safe to say that the continued maintenance of such a journal in a flourishing state must be productive of good to the trades and industries of the country.

Articles treating of archaeology, art, and the advancement of technical education, as well as the more strictly specialist sections of the paper dealing with subjects of interest to builders, architects, engineers, and others connected with cognate arts and crafts constitute a feature of the production which gives the IRISH BUILDER an interest for a large circle outside of those classes whose special organ it essays to be—particularly is this so during the present revival of interest in the development of the industrial resources of Ireland. A new and interesting feature will, we understand, be a series of illustrated interviews with well-known men connected with art and industry in Ireland.

CHURCH FURNITURE AND ITS DESIGN.

We would like to call our readers' attention to a new society, which has lately been formed with London for its headquarters, with the title of "The Church Crafts League." We have received from the Secretary a copy of the rules, and we feel sure that the league has a most useful career before it. A correspondent writes to us as follows:—

"Thousands of pounds are spent every year in England and Ireland, on the decoration of churches. Yet the work which is to be found in the houses of God is of such a character as to make anyone of the merest artistic temperament shudder. And this is because the Church and the clergy are so completely out of touch with the artists. The renewed activity of the Church during the past thirty years or so has given rise to a new trade—that of the "church furnisher."

"Should a lectern, a communion table, a litany desk, or a stained glass window be required, the parson just writes to the church furnisher for a catalogue, and selects a No. 5 lectern at £7 10s., or a No. 10 communion table at £15. The church furnisher, who has hundreds of No. 5 lecterns, and No. 10 communion tables, merely packs one up and sends it off, and that is how our churches are furnished. That artists, as a rule, are not keen churchmen is hardly to be wondered at.

"Now, it is obviously the duty of those who are custodians of the buildings of the people that not only the sermons which are preached in our churches, but the very furniture fittings of the sanctuary, should tell us of the God who is a God of beauty and of joy and gladness. The responsibility of the clergy and church officers for the culture of the people and their artistic education is great. The Church Crafts League has been formed in order that the responsible people may be made conscious of their duties, and that they may be helped to carry these duties out. When a clergyman wants a stained glass window, a communion table, or any other article of furniture or decoration, he may write to the Secretary of the League, who will furnish a list of artists and workers in the craft applied for, free of charge. If further advice should be needed, the committee will gladly give it, and so it is possible for the applicant to have the guidance of genuine artists on any point of church decoration. We heartily recommend the League to those of our readers who are interested in church art. The subscription for ordinary members, who need be neither clergymen nor artists, is 5s. per annum, and, as no charge is made for advice, the working expenses are entirely defrayed by the subscriptions and donations of members."

Of course, we naturally assume that the Society, in pursuing this useful work, will not abrogate to themselves the functions of the superintending architect, who is, after all, the best judge of what will suit the building he has designed, but he may often, we feel certain, himself have recourse to the advice of the Society, with the object of being put in immediate touch with artistic workers and genuine craftsmen.

Reproducing Drawing.—Drawing is laid on top of a sheet of ferro-prussiate paper and kept flat by a sheet of glass in a stout frame. A good light is required to get clear copies. Time taken depends upon the light, and varies from a few hours to two or three days. Ferro-prussiate paper may be obtained at most photographic material dealers. The fixing is accomplished by well washing in water; a little salt may be added to first water.

CONTRACTS.**URBAN DISTRICT OF RATHMINES & RATHGAR.****HOUSING OF THE WORKING CLASSES.****NOTICE TO BUILDERS AND CONTRACTORS, TO ROAD AND SEWER CONTRACTORS, AND TO SANITARY PLUMBERS.**

The Council are prepared to receive Tenders for—

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in accordance with plans, specifications, and conditions of contract, prepared by Fredk. J. Hicks, Architect, 28 South Frederick-street, and which may be inspected at his office daily between the hours of 11 and 4 o'clock.

Tenders to be on the prescribed forms, which, together with the bills of quantities, may be obtained at the offices of the Surveyors, Messrs. Beckett and Medcalf, 10 Leinster-street, on and after FRIDAY, FEBRUARY 1st, on payment of a deposit of Two Guineas, which will be returned on receipt of a *bona-fide* Tender, accompanied by bills of quantities priced in ink, and an undertaking that the contractor is willing to enter into a bond for the due performance of the contract.

Any Tender not complying with these conditions will be disqualified and the deposit forfeited.

Sealed Tenders, accompanied by priced Bills of Quantities, addressed to me at my Office as under, are to be delivered not later than 4 o'clock p.m. on THURSDAY, FEBRUARY 21st endorsed, "Tender for Dwellings for the Working Classes," or "Tender for Roads and Sewers," or "Tender for Plumbing," as the case may be.

The accuracy of the quantities is not guaranteed.

The lowest of any Tender will not necessarily be accepted.

(By Order)

FRED. P. FAWCETT,

Clerk to the Council.

Town Hall, Rathmines.

CONGESTED DISTRICTS BOARD FOR IRELAND.

TIMBER FOR SALE ON THE PORT ROYAL ESTATE, NEAR BALLINROBE, CO. MAYO.

The Congested Districts Board for Ireland invite tenders on or before the 4th proximo, for a quantity of timber growing upon the above Estate, consisting of 56 beech trees, 4 oak, 22 elms, 201 ash, 41 sycamore, 56 chestnut, 1 birch, 1 holly, and 1 alder.

The Estate is situated about seven miles from Ballinrobe Railway Station, on the Midland Great Western Railway of Ireland.

The timber will be sold standing; all expenses incidental to cutting and removal being borne by the purchaser.

Intending purchasers should communicate with the Board's Land Inspector, MR. HERNY DORAN, BALLYHAUNIS, to arrange a day for the inspection of the trees, and all timber should be felled and removed from the Estate before 1st July next.

By Order,

F. W. D. MITCHELL, Secretary.

23 Rutland-square, Dublin.

TO BUILDERS.

Tenders are invited from competent builders for the erection of a new Curate's residence at Balheary, Co. Dublin, for the Very Rev. Wm. Hanley, Admr.

Plans, specifications and all particulars may be obtained at the offices of the architect.

GEORGE L. O'CONNOR, C.E., M.R.I.A.I.

Architect.

198 Great Brunswick-street, Dublin.

N.B.—The lowest tender will not necessarily be accepted.

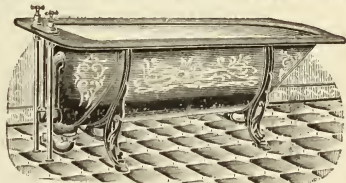
TO BUILDERS.

The IRISH CO-OPERATIVE AGENCY SOCIETY, LTD., invite Tenders from competent persons for building General Offices and Stores at Limerick in accordance with plans and specifications prepared by Bryan E. F. Sheehy, Esq., C.E., Architect, which may be seen at the Offices of the Society, 13 William-street, Limerick, between the hours of 10 a.m. and 2 p.m. (Saturdays excepted) any day after the 1st February, 1901.

Tenders to be lodged on or before the 15th February.

The lowest or any Tender not necessarily accepted.

D. L. ROCHE, Secretary.

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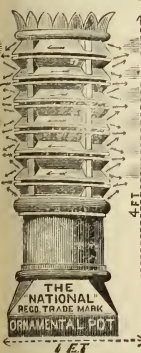
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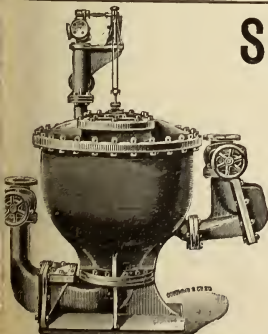
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OUR INTERVIEWS.—No. 1.

SIR THOMAS DREW, P.R.H.A.

In initiating a series of interviews with the leading men connected with building in Ireland, no more fitting start could be made than with Sir Thomas Drew, P.R.H.A., the President of the Royal Institute of Architects of Ireland. Having the privilege of now many years acquaintance with Sir Thomas no difficulty was experienced in seeing him—not, indeed, that any one experiences any great difficulty; for busy man and versatile as he is in the employment of his time, professionally and socially, Sir Thomas Drew is ever amongst the most accessible of people—indeed, a constant recipient of the confidences of the puzzled, the doubtful, or the beginner in the profession, and few budding architects who have availed themselves of his kindly advice but will gladly admit they are the better and the wiser for his ready help and ripe judgment, freely accorded to all. Sir Thomas Drew I found in his pleasant little office in Clare street—a room that somehow is suggestive of an architect. Few of our Dublin architects have attempted to give their sanctum what is termed “an artistic aspect,” and Sir Thomas Drew has not ostentatiously striven, but there is unquestionably something—whether it is in the few well chosen articles of furniture, the pleasant, quiet tone of colour, or the nice old Georgian mantel (snatched from destruction), or what, I know not, but there is something.

I had mentally prepared a number of questions, but half were never propounded; the time went too pleasantly in easy chat, almost to the risk of forgetting the object of my call. “Sir Thomas Drew, you were, I believe, born in Belfast?” was the first of those mental questions stored in my mind to be used in the most approved fashion of the interviewer. But it was one of our “slaughtered innocents.”

In the result I confined myself to a few “leading” questions. “What is your opinion on the present state of the architectural profession in Ireland, and the prospects of elevating it educationally to the level of English practice?” I began. “I see no reason why it should fail to reach a high level, and why architectural education should not attain to a high standard in Ireland; the only obstacle, and it is a serious one, is our isolation. England has in itself a wide field to draw upon, and is moreover in touch with the Continent in a manner we can never be. A very good spirit seems to prevail in Ireland at present, and we must look to the rising generation to bring architecture in this country to a higher level. A not very satisfactory feature is, however, the increasing employment of English architects. At present there are many Englishmen non-resident in Ireland who have designed some most important works. Of course, this may be in a measure due to Irish architects themselves, and if they take exception thereto the only way is to qualify themselves to meet the English architect on his own ground, and perhaps carry the war into the enemy's country by boldly entering for and winning competitions on the other side.”

“More particularly in regard to Education and its development architecturally, what are your views?” I asked—“Of course, I am in favour of advancing education by every means in our power,” said Sir Thomas; “but I hold with the majority of architects who believe we should keep it as much as possible in our own hands—that is, we should have a controlling influence. No doubt many of those who suggested the establishment of a Chair of Architecture at the College of Science and Classes of Architecture in connection with the Technical Schools, thought the opinions expressed at a recent meeting of the Association strange, but the fact is we cannot permit anything to be done which would open a back-door into the profession for incompetent or half trained men.” “You are then, I hope, in favour of the maintenance of the old-fashioned system of apprenticeship?” “Decidedly,” replied Sir Thomas, “it is at present the only test we have, and should be enforced. But I agree that men who have entered into practice on their own account, and have honourably and fairly carried on business for a number of years, should be eligible for membership of our Institute, even if they have not served regular indentures. The rule insisting upon indentures is not framed

for the purpose of excluding such as these, but rather for securing that young men desirous of admission shall have received some form of an adequate training as architects.”

“Sir Thomas, do you not agree with me that the relations architect and builder in Ireland are of an exceptionally pleasant and harmonious character?” “Yes,” replied Sir Thomas Drew, “that is certainly so, but it is a delicate subject to say much upon, because, just now, there appears to be a very general movement amongst the builders, which finds expression in a desire for a revision of the “general conditions of contract” now in almost universal use. These claims have admirably served their purpose for a lengthened period, though it may well be, that some revision of the clauses governing the terms of arbitration is desirable. It must be remembered,” added Sir Thomas, “that this form of contract was originally drafted in London, with extreme care, and under the guidance of the best procurable legal advice, given by men who were not only able lawyers, but of special experience in this particular class of legal work. Further, before being adopted by the Irish Institute, the form of contract was submitted to the judgment of the ablest Irish lawyers of the day. The builders have tentatively drafted a form of contract for acceptance, but the Council of the Irish Institute have, not as yet, considered it. The existing form of contract is so carefully drafted, from a legal point of view, that any amendments thereto must be prepared in irreproachably legal fashion, with the help of the ripest judgment. Anyhow, the whole question is now under consideration in London, and it is unlikely that anything will be done here until we know what determination has been arrived at in London. As an example of the evils of ill-drawn conditions, I may cite the once famous building case of Doolin v. Dixon, which lasted over thirty days, and cost an enormous sum, in costs. It formed the subject for a remarkably interesting paper read before the Institute by the late James Owen, M.A., a former president, and it is printed in the proceedings of the Institute. The Rev. Mr. Dixon, the Superior of the Vincentian Church, at Phibsboro', and the late Walter Doolin, were an admirably matched pair of opponents. Both were keen and obstinate. The contract was so peculiarly drafted that almost every week there was a fresh arbitration. Nearly every shovelful of mortar used was the subject for a fresh sitting of arbitrators, and, as I have said, ultimately ended in law.”

I next asked Sir Thomas Drew whether he had not to note very many changes in the conditions under which architects worked nowadays, and when he first began his career in Dublin. “A very great change, indeed,” he answered. The most notable difference of all is, perhaps, that of social position; then architects were hardly looked upon as gentlemen, or as professional men at all. They were considered to be something of the nature of tradesmen, and were generally ignored. No important buildings were in course of erection, and most of their energies were devoted to the designing of ill-planned suburban houses. The great increase of building some forty years ago resulted in a great quantity of building litigation, and the lawyers, needing technical guidance, architects began to be called in as expert witnesses. This class of work became a speciality with many of them, and, finally, the recognition of architects by the greatest lawyers of the day, who were glad to avail themselves of their help, greatly contributed to improve the social status of the profession. Generally, there is now a vast improvement, from every point of view.”

OUR NEXT INTERVIEW.

The subject of our next interview will be MR. THOMAS MANLY DEANE, M.A., of the firm of Sir Thomas Deane and Son, Architects.

EXAMINATIONS IN SANITARY KNOWLEDGE.

The Sanitary Institute have arranged to hold Examinations in Practical Sanitary Science, and an Examination for Inspectors of Nuisances at Dublin on June 7th and 8th.

Full Particulars to be obtained at the Offices of the Institute, Margaret-street, London, W.



SIR THOMAS DREW, P.R.H.A.,
President of the Royal Institute of the Architects of Ireland.

THE
ARCHITECTURAL
ASSOCIATION
OF IRELAND



PROGRAMME
FOR
FEBRUARY,
1901.

SESSION 1900-1.

On Tuesday night last the members had assembled to hear a lecture by Mr. P. J. O'Reilly, M.R.I.A., but the mournful tidings of the death of Her Majesty the Queen having just then been made known in Dublin, the meeting was at once declared adjourned.

ORDINARY MEETINGS.

Grosvenor Hotel, 7.45 p.m.

TUESDAY, FEBRUARY 5th.

Two Mount St. Michael's; Irish and Norman, illustrated by Lantern Slides.

Mr. P. J. O'REILLY.

FEBRUARY 19th, Optical Refinements in Classic and Medieval Architecture, illustrated by Lantern Views.

Mr. G. COFFEY, M.R.I.A.

CLASS MEETINGS.

22 CLARE-STREET, 8 p.m.

DESIGNING CLUB.

FRIDAY, FEBRUARY 15th.

CLASS OF DESIGN.

THURSDAY, FEBRUARY 14th,

"A Stone Porch to a Church."

Mr. G. G. LYNES.

THURSDAY, FEBRUARY 28th, To be Announced.

Mr. R. C. ORPEN.

ARCHITECTURAL HISTORY CLASS.

MONDAY, FEBRUARY 11th,

"Perpendicular Period."

Mr. G. G. LYNES.

MONDAY, FEBRUARY 25th, "English Domestic."

Mr. R. C. ORPEN.

BUILDING CONSTRUCTION CLASS.

THURSDAY, FEBRUARY 7th, "Joinery."

Mr. F. BATCHELOR.

THURSDAY, FEBRUARY 21st,

"Criticism of Drawings."

Mr. F. BATCHELOR.

TECHNICAL DEMONSTRATIONS.

FRIDAY, FEBRUARY 1st, 4.30 p.m. at Messrs.

Fletcher and Phillipson's, 10 Lower Baggot-street.

"Electric Lighting." Mr. B. A. PHILLIPSON.

FRIDAY, FEBRUARY 8th, 4.30 p.m. at Messrs. J. F.

Keatinge and Sons, 42 Grafton-street.

"Decorative Materials." Mr. J. F. KEATINGE.

FRIDAY, FEBRUARY 15th, 4.30 p.m., at Mr. John

Early's, 1 Upper Camden-street.

"Glass Manufacture." Mr. JOHN EARLY.

FREDK. J. HICKS,
EDWIN BRADBURY. } Hon Secs.

*Postponed from January 22nd on account of the death of Her Majesty the Queen.

THE ROYAL HIBERNIAN ACADEMY OF ARTS.

Immediately on the news of the Queen's death becoming known, the President and Council despatched a

telegram of respectful condolence to His Majesty the King.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The President, on behalf of the Institute, addressed a telegraphic message of condolence to the King, on Wednesday, 23rd inst.

The following acknowledgment was telegraphed from Osborne on Thursday:—"Am commanded by the King to thank you and Council of Royal Institute of British Architects for your kind expression of sympathy.—EQUERRY."

THE INSTITUTION OF CIVIL ENGINEERS.

The Ordinary Meeting of Tuesday, the 22nd January, was adjourned without the transaction of business, to Tuesday, the 20th January, at 8 p.m.

The Students' Meeting appointed to be held on Friday, the 25th January, is adjourned to Friday, the 1st February, at 8 p.m.

All the other meetings are indefinitely postponed.

MASTER BUILDERS' ASSOCIATION.

In consequence of the death of Her Majesty the Queen, it has been decided not to hold the annual dinner, fixed for the 16th of February next.

Scientific Sanitation.—The aim of sanitary science must be to remove from buildings and their appurtenances all conditions which can contribute to the growth and distribution of pathogenic organisms, and, as far as possible, to provide those conditions under which such organisms cannot exist. This is a difficult problem, and cannot be solved until the life-history of every disease-producing organism has been thoroughly studied. Something in this direction has already been accomplished, but the knowledge which has been gained shows clearly that the solution of the problem will not be easy. Dr. Sidney Martin's experiments with the typhoid bacillus show that this soon dies in "virgin" soils, whether these are sandy or peaty, but that it rapidly multiplies in moist sterilised samples of soils from gardens and other cultivated places, and retains its viability and vegetative properties for months and perhaps years. Moist sterilised soil which had been impregnated with the typhoid bacillus was found to contain the bacilli at the end of 456 days. The soil was then naturally dried for 49 days till it "could be readily powdered into a fine dust"; the bacillus was still there. Other experiments showed that the bacillus spread through the soil in different directions. The practical application of the knowledge gained by medical experts is the problem which confronts the sanitarian, whether he be architect or engineer, and in attempting to solve this problem the importance of sunlight and fresh air must not for a moment be forgotten. These are the natural germicidal agents which he must endeavour to utilise to the best advantage. It is also essential that rooms containing sanitary fittings should be so constructed and arranged that they can be kept scrupulously clean with the least possible trouble. Accumulations of dirt or dust in dark, unventilated rooms generally constitute suitable soils for the growth of bacteria.—*Builder*.

"How London is Drained: A Chat with Sir Alexander Binnie," is the title of an extremely interesting and copiously illustrated article that appears in the current issue of *The New Penny Magazine*. "In discussing the sanitation of London," says Sir Alexander (of whom, by the way, a capital portrait accompanies the article), one should bear in mind the fact that it is populated by five millions of people. Our works are the largest in the whole world. We have nearly a thousand men at work, day, night, and Sundays—the latter are frequently busy days. During a year, we have to deal with 75,000,000,000 gallons of sewage. In a single day, about 205,000,000 gallons have to be treated. The cost of the works amounts to something near £8,000,000.

CORRESPONDENCE.

THE DUBLIN CORPORATION HOUSING SCHEME.
BRIDE'S ALLEY AREA.

TO THE EDITOR OF THE IRISH BUILDER.

DEAR SIR,—In your issue of the 16th inst. you say—"We understand that Messrs. Kaye Parry and Ross have been appointed architects for the big Bride's Alley Housing Scheme, the inception of which is due to the philanthropy of Lord Iveagh." Permit me to point out that this is an error. The Bride's Alley Housing Scheme is entirely a Corporation scheme, and the buildings in connection with it are being carried out from my plans and under my superintendence.

Lord Iveagh's scheme, with which I understand Messrs. Kaye Parry and Ross are connected, is the Bull Alley Scheme.—I am, dear sir, yours etc.,

CHARLES J. MACCARTHY, City Architect.

[We much regret this mistake, which arose through a stupid clerical error.—Ed.]

"DOES INDIGENOUS IRISH ART EXIST?"

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—In your last issue, in the course of a letter on the question of "Indigenous" Irish Art, Mr. M. J. C. Buckley somewhat gratuitously raises the whole question of the architecture of the present day, and, taking this oft-disputed question of the origin of Irish art as a text, delivers a homily in the best manner of the somewhat obsolete doctrines of the early school of the Gothic Revivalists, and with all the *ex-cathedra* obstinacy of John Ruskin, tells us we should revert to the forms and ornament of late Gothic work as the keynote for our modern work.

With much that Mr. Buckley says I cordially agree; unquestionably the modern "Celtic" craze has been overdone, and the work now turned out is mechanical, dull and insipid to the last degree. Mr. Buckley refers generally to the deadly uninteresting work done in Ireland during the past forty years. I am at one with him. But the remedy he suggests is nearly as bad as the disease. With a few brilliant exceptions, the ecclesiastical work of that period is influenced by the precepts of that brief phase of the Gothic revival when French and other foreign architectural detail was in vogue. For some reason or other this senseless travesty of a foreign and exotic element took permanent hold in Ireland, and has ever since held sway as the favourite type of church building; going from bad to worse—deteriorating, till to-day the majority of churches in Ireland are simply caricatures of early French Gothic—many of them loathsome in their villainous detail. Fine and dignified as was the Irish work of such men as the late A. W. Pugin, J. J. McCarthy, William Burgess, E. W. Goodwin, and one or two others, their hosts of imitators have stuck in the one groove—any movement being in a backward direction, falling into weak imitation that lacks the pureness and originality of detail that marked the work of the men to whom I have referred.

I cannot follow Mr. Buckley in the boundless desert of discussion which his main question opens up; for it is too vast a subject to treat in a letter to a paper. I will content myself with a remark on two of his contentions:—Of early Irish art it is not "nonsense" to say that it is indigenous. There is, at least, as much to be said upon one side as upon the other. The early Irish missionaries, in the course of their wanderings, left scarce a corner of England or the Continent untouched. Must they not have left their mark there too?

Of the Irish art of the close of the fourteenth century, there is absolutely no characteristic which can be described as "indigenous." That it possessed much originality, and was utterly unlike anything done in England, I freely admit. But that it bears signs of strong Continental influence cannot be gainsaid. That it had local peculiarities of its own is but the common characteristic of every phase of medieval work in every period.

In his concluding remarks Mr. Buckley is downright wanton in his attack on our beautiful public buildings in Dublin, mostly the products of the one period or modern architecture, of which we in Ireland can boast, for the latter half of the eighteenth century it was which gave us the fine, dignified work of "The Irish Renaissance," as emphasized in those buildings which Mr. Buckley so lightly condemns.

If we are going to try and put our ordinary present day architecture on the level of contemporary English work, for heaven's sake, don't let us be squabbling about "styles." It's "style," not "styles," that does it. Let a man but study well, good old work, of whatsoever kind it be, and then, if he has the right spirit in him, do what comes to him honestly, and, putting forth his best endeavours, we shall have, if not a twentieth century style of architecture, at least, not copyism and travesty, but wholesome work of some originality, and it doesn't matter a jot whether he cares to call it classic or Gothic, "Queen Anne," or "Mary Anne."—I am, sir, yours etc.,

"HIBERNIAN."

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ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering enquiries in these columns, and affording any information in our power.]

IR. LUIGI SALOI-CRISTIANI (Toscana, Italy).—We are obliged by your enquiry, and have sent you specimen copy of the IRISH BUILDER, together with the Information you desire.

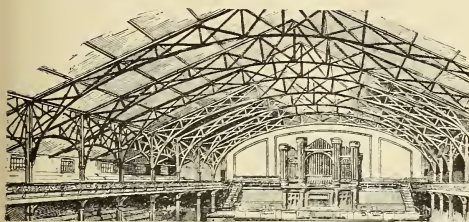
C. GAMBLE (Chicago, U.S.A.).—You do not say what family of Croftons you refer to. There are several branches. The present Lord Crofton (third Baron, b. 1834, s. of second Baron, S. father 1869) resides at Moate Park, Roscommon, and is the head of the house of Crofton. We cannot at this moment recall the particular article to which you refer as having appeared in the IRISH BUILDER, but if you give us further particulars of the exact information you need, we shall look up the files and give you more details.

H. B. (Belfast).—The qualifications requisite for membership of the Royal Institute of Architects, Ireland, are an apprenticeship of not less than three years to a member of the Irish or the British Institute, and not less than two years' subsequent experience as assistant. The Royal Institute of British Architects does not exact these qualifications, but has instead a test by examination (which is of a searching character). The Architectural Association of Ireland admits to membership all persons engaged as pupils, assistants, or principals. The Society of Architects, (London) has an examination test. In all these Societies candidates must be proposed, seconded, passed by the Council, and balloted for.

J. C.—The English method of measuring plaster cornices over 6 in. girth is by the foot super (length by breadth). Number and price separately all mitres, stops, or returns. Return work circular on plan separately. Ditto ditto work separately on shoation. Cornices under 6 in. girth are invariably measured by the foot run, mentioning the girth. The Irish custom is to measure lineally on the mean line of projection—e.g., a cornice projects 12 in. on ceiling. Don't measure from wall to wall, but half-way out on the projection. Give the girth and always add to it 1 in. both on ceiling and on wall, to allow for wall and ceiling plaster. Mitres, returns, stops, &c., as in English method. Circular work ditto. If you are only checking a builder's account you may simply measure lineally and allow an extra foot for every mitre. Work circular on plan ditto, but allow price and half. Work circular in elevation a little less.

TRALEE.—The essential qualifications which a good builder's clerk should possess are—first, he should be a good accountant and familiar with ordinary office routine in every branch. He should possess a knowledge of the peculiarities of the building trade. If, in addition, he possess some knowledge of prices, the management of workmen, and is capable of preparing simple quantities, it adds greatly to his value. It is not essential he should be able to "prepare plans," but he will find that if he is able to trace neatly, and is capable of making simple drawings, it will be a very useful accomplishment.

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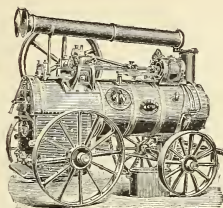
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BOOKS RECEIVED.

A BOOK BY A DISTINGUISHED ARCHITECT.

THE MEMOIRS AND CORRESPONDENCE OF COVENTRY PATMORE. By Basil Champneys. London: George Bell and Sons, 1900. (In two volumes.)

Seldom are the ranks of men of letters recruited from amongst architects; that is to say, the ranks of those men who attain any great pre-eminence as wielders of the pen, yet there have been notable exceptions, for some, indeed, have added their contributions to the great storehouse of English literature in a manner not without distinction. Not a few of our leading architects are alumni of Oxford or Cambridge, but the proportion of these to the mass of the profession is small, indeed. The happy-go-lucky system under which an architect is trained and enters upon his calling is not conducive to the putting forth of endeavours to the attainment of culture. But not to these circumstances alone do we attribute the sparse representation of the architectural profession in the ranks of the writers of even the transient literature of our day, but rather to the peculiarly onerous and absorbing character of an archi-

te of the labour, our appreciation of Mr. Champneys' successful effort was strong, and we warmly congratulate him upon the production of a literary work that is at once marked by thoroughness—and style.

Mr. Paul Waterhouse says:—"I cannot praise the work better than by a little blame. Mr. Champneys has kept himself too much in the background." True, for not everyone would recognise in the successful biographer the still more successful architect who has done such excellent work and made so good a mark in the modern architecture of the University and town of Cambridge.

But to come down to the work itself, Coventry Patmore was a notable, if peculiar, man—peculiar in many things, and in none more so than his views upon architecture. As a critic of architecture he is scarce known. Yet one of his early efforts as a writer was a series of articles contributed to the *Edinburgh Review* entitled "Principle in Art"—early although it was, subsequent to the "Angel in the House," the work which is his chiefest claim to fame as a poet. Of Coventry Patmore, the man and the poet, these two volumes of Mr. Champneys give us a fine picture. To us, personally, they were of absorbing interest, and are readable in the best sense of the word. Their construction as a biography is original; the first volume deals with his life and work, antecedents and the personal recollections of his biographer, and as such claims first place in point of interest, the second volume being devoted to his correspondence with his contemporaries, and is only of lesser interest to the first. It seems a distinctly original thing in a biography that the biographer closes the first volume with the death of the subject of his writings. A chapter of the life which held our interest much, is that which treats of Patmore's little book entitled, "How I Managed and Improved my Estate." Coventry Patmore, late in his career, went from a position in the British Museum to take up the duties of a country gentleman, and it says much for the versatility of the man's nature that from the occupation of poet and dilettante, he turned, with conspicuous success, to the improvement of his estate, and fulfilled the role of squire with decided distinction, showing himself capable, earnest, and possessed of a spirit of practical economy that resulted in the improvement and embellishment of his property and its ultimate sale, at a handsome profit.

Of Coventry Patmore's domestic life, his first and second marriages and the pleasant home surroundings, we cannot treat, and must refer our readers to the biography itself.

When we came into possession of his estate of "Heron's Ghyll," he found himself the owner of a stucco-fronted facing veneering the old Georgian house—a sore irritation to his æsthetic sensibilities. For, added to a long intercourse with men of versatile talents in all the arts, his sympathy and belief in the school of the pre-Raphaelites had tended to bring a naturally artistic temperament to a keener appreciation of the beautiful in Art as well as in Nature. No sooner had he settled at "Heron's Ghyll" than he determined its entire reconstruction to be essential to his needs, artistic and domestic, and his friend, Mr. Bentley (now architect of the New Westminster Cathedral) was called to his aid; but Patmore himself supervised the reconstruction, changing this and improving that, led to many an original observation on labour, for he himself superintended his men, working with his own hands. He tells us how his house (like Peter) "stood upon a rock, and the farmyard close by was entirely paved with the living rock, but all experts, quarrymen and others, assured me that that stone, fit for fine masonry work, was never found so near the surface. Having always, however, been suspicious of experts, I resolved to try. The experiment cost about £10, and if it succeeded it might save me a thousand.

"Accordingly, I had two square shafts, each about four feet deep, and large enough to admit a man sitting upon stone saw, sunk in the solid rock, leaving between them a clear block of about three or four feet wide, and six feet apart. The stone-sawyer, sitting in one hole with room for the end of his saw in the other, sawed down the sides of the mass between the shafts; the block was then loosened b



Black kindly lent by

COVENTRY PATMORE.

["Irish Figure"]

tect's occupation. We have said there have been many exceptions to the rule. Augustus Welby Pugin had few superiors as a master of clear and beautiful English that alone held the reader's attention from cover to cover of his books, but his talents were all devoted to the propagation of his views, and to the advancement of his beloved art. Whatever may be the verdict of future generations as to the precise position of Thomas Hardy, in Victorian fiction, there can be no doubt but the quondam architect is pre-eminent as a master of the detail and realism of life, embodied in a strong, pure, Saxon type of English—fit vehicle for expressing the thoughts of the historian of the peasantry of Wessex.

So, when we came across a pleasant little critique (or, rather, an appreciation) by Mr. Paul Waterhouse in the *Journal of the Institute of British Architects* of a memoir of Coventry Patmore, and when we noticed that it was the work of Mr. Basil Champneys, that was under consideration, our interest was aroused. That Mr. Champneys, an eminent architect and busy man, should have found time for so laborious a task, was of itself noteworthy. Later, when a copy of the work itself reached us for review, while the wonder was increased at the evident thoroughness

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COMPETITIONS.

AUSTRALIA.—Feb. 14.—Designs are invited for a statue to honour all Australian soldiers whose lives are lost on the South African battlefield. Statue to be of bronze or marble and cost not to exceed (1) £1,500, (2) £2,000, (3) £2,500. The competitor who submits the design which may be accepted will receive the order to execute the statue. Messrs. J. W. Nedwell and W. D. Hill, hon. secretaries, Ballarat.

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
Newtownards-Water Supply and Sewerage	.. Newtownards R.D.C.	.. Mr. Jas. Colville, Clerk Workhouse, Newtownards	9th Feb.
Manorhamilton, Repairs to Workhouse	.. Board of Guardians	.. Mr. P. Keany, Clerk	31st Jan.
Rathmines Artisans' Dwellings	.. Rathmines U.D.C.	.. Mr. F. G. Hicks, Architect, 28 Sch. Frederick-street	21st Feb.
Waterford Convent	.. Superiores	.. Mr. W. H. Byrne, Architect, Suffolk-street, Dublin	No date
Alterations S.S. Michael and John's Church, Dublin	.. Rev. Canon Gorman	.. Mr. G. L. O'Connor	No date
Dunmanway (Cr. Cork), Bank	.. Munster and Limerick Bank, Ltd.	.. Mr. Arthur Hill, M.A.B.E. Architect, Cork	No date
Castlebar (Two Side Altars)	.. Rev. P. Lyons, Castlebar	.. Mr. W. G. Doolin, M.A., Architect, Dawson Chambers, Dublin	No date
Curate's Residence, Balheary, Co. Dublin	.. Very Rev. Wm. Hanley, Admr.	.. Mr. Geo. L. O'Connor, C.E., Architect, Dublin	No date
General Offices and Stores, Limerick	.. The Irish Co-operative Agency Secy., Ltd.	.. Mr. Bryan, E. F. Sheehy, C.E., Architect, Limerick	15th Feb.

TENDERS.

CURRAGH.—No. 1 Contract or Gough and Keane Barracks, Messrs. Collen Bros., 5 Clahwilliam Place, Dublin, and also 6½ Portdown, £55,734 (accepted). There were five other contractors, in limited competition.

DUBLIN.—For the new morgue, Dublin Corporation.—Mr. C. J. MacCarthy, city architect.—Mr. Thomas Mackey (accepted), £4,259 (nett). For additions to the Father Mathew Memorial Hall, Church Street.—Mr. Patrick Hanway (accepted), £1,550.

KILLARNEY.—For erection of working-class lodging-houses at Killarney.—P. Murphy, £3,535; T. Gallman, £3,317; J. B. Healy, Tralee (accepted), £3,790. Nine two-storey cottages.—F. Nunn, Killarney, £2,200. Fourteen one-storey cottages.—P. Murphy, Killarney, £1,745.

LARNE.—For laying granolithic pavement, crossings and channels, Larne.—W. D. Henderson & Sons, £600; W. McNeill, Princes Street, Larne (accepted), £509 00. 3d. For construction of sewers, with the necessary manholes, &c., works in connection therewith, Larne.—G. Trotter, £359 4s.; W. McNeill, £296 4s. 10d.; E. Murphy, 20 Hope Street (accepted), £280 17s. 4d. For painting and repairs to the interior of the M'Garel Town Hall, Larne.—J. Lynn, £92 15s. 2d.; H. Girvan, £88 11s. 4d.; J. Lyons, Circular Road, Larne (accepted), £81 1s.

wedges from its bed, and brought to the top with much difficulty and labour." Primitive, perhaps, but decidedly original, and, as the result proved, profitable and effective.

In a letter to his wife he gives us a delightful comment upon labour in the following:—

"It has been a bad day for work, but a little edification and a good deal of demolition have been got through. I was out all day in the rain, and have used up three hats, and as many coats and boots, in my endeavour to keep the men to their work.

"I had one bit of good luck. I had been complaining to Bannister of the idleness, especially of the labourers, but his answer, of course, was, that each bricklayer's labourer did enough if he made mortar and carried it and the bricks to the bricklayer. Immediately after this I caught a third labourer bringing mortar to two bricklayers, of whose labour I had been complaining. So here was a fine and unanswerably legitimate opportunity for administering a blow. I asked labourer No. 3, in the hearing of the bricklayer, if he belonged to either of the bricklayers he was bringing mortar to. 'No.' So I ordered him to go immediately on other work, remembering that it was clear his services were not wanted, as I had seen the other two standing a few minutes before with their hands in their pockets.

"This evidently produced a sensation, and Mr. B., to whom labourer No. 3 went and reported my order, instead of sulking, as I thought he would, was decidedly more civil than before." And again, he says, "I have a suspicion that the workmen have agreed among themselves that the job shall last till Christmas, and that addition of labour is really 'division' of labour."

"PROGRESS.—A course all but one stone added to the chimney. A mullion and a half worked for the new gable. A sill set, taken out again because it was not straight. A neat little deal box nearly finished for Mr. B.'s Sunday hat.—Yours, C. P." And so on.

Of Patmore, the poet, Mr. Champneys has much to say, space forbids our dwelling further on this interesting biography, but he has not only earned for himself a name as an able and painstaking biographer, but has enhanced the reputation of one who, though but one of our minor poets, was, nevertheless, undeniably a master of fluent, easy, versification.

The second volume we have scarce been able to touch upon in this brief note. It is chiefly devoted to the poet's voluminous correspondence, and when we note that it includes his exchanges of letters with Ruskin, Carlyle, Brown-Jones, Aubrey de Vere, Newman, and Tennyson, its interest may well be gauged.

BOOKS RECEIVED.

CATHEDRAL BUILDERS, by Leader Scott. London, Sampson, Low & Co.
ELECTRICITY SIMPLIFIED, by A. T. Stewart, A.I.E.E.; price 1/6.
W. & R. Chambers, London and Edinburgh.

BREVITIES.

New Altar.—The Rev. John M'Manus, P.P., Ballagaree, is presenting a splendid altar to his parish church.

The Electric Light has been installed at the Methodist Church, Belfast, the work having been carried out by Messrs. Smith and Parkes.

The Parish Church of Carnew is undergoing extensive improvements and repairs, and has been heated by Messrs. Musgraves' small bore hot water heating apparatus.

Duresco.—Messrs. James Dunthie and Co. will have over 50 tons of their Dure co and Charlton Silicate White Paint at the coming Glasgow International Exhibition, which opens in May.

A Smart Piece of Engineering was recently accomplished on the Canadian Pacific Railway at Streetville, near Toronto, where an old Howe Bridge was replaced by a new steel lattice girder bridge of 130ft. span, the traffic being interrupted for forty minutes only.

The liability to fire from lime was curiously exemplified the other day, when some lime in a cart belonging to Messrs George Grimwood & Son, builders, Sudbury, became damp, and set fire to the sacks containing it. The cart burst into the flames with the butt end of his whip, but they continued to break forth, and he had to shoot the load on to a piece of waste ground.

The New Sanatorium, Malvern, is being warmed and ventilated by means of Shorland's patent double-fronted Manchester stoves with tiled sides and with descending smoke flues, patent exhaust roof ventilators, and special inlet ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Mr. John Jones, of Carlyle Works, Chelsea, London sends us a capital illustrated catalogue of his drain testing and clearing apparatus. The little catalogue is concise and handy and describes quite a large variety of most useful and up-to-date appliances for sanitary work.

Germany heads the Portland cement trade and England no longer holds a monopoly of it. The annual production of Portland cement in England is now between 7,000,000 and 8,000,000 barrels; that of France barely 3,500,000 barrels; while Germany's output is from 18,000,000 to 20,000,000 barrels. The United States produced 5,000,000 barrels, and imported 2,300,000 last year.

ARCHITECTURE.—Draughtsman is willing to Prepare Scale and Detail Drawings for Alterations, &c. Accuracy guaranteed; Specifications and Quantities Terms moderate.—Reply to this Office.

THE IRISH BUILDER.

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, & SANITATION,

ARTS AND HANDICRAFTS.

Every Second Wednesday.

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HEAD OFFICE:

FEBRUARY 13, 1901.

11 LOWER SACKVILLE ST.,
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

Congratulations to Cork's new Lord Mayor, Alderman E. Fitzgerald, who is an extensive builder and contractor.

We are glad to say the plumbers' strike in Dublin has now been amicably settled, and good relations between employers and employed restored.

A splendid lecture on Mont St. Michael was delivered before the Architectural Association by Mr. P. J. O'Reilly. The meagre attendance was, in our opinion, nothing less than a disgrace to the Association, which numbers some 130 members.



The late Mr. R. F. LIDWILL, J.P.

Mr. R. F. Lidwill, whose lamented death we lately recorded, was a very prominent member of the building trade of Dublin, and an active supporter of the Master Builders' Association. Though a strong politician, he was universally popular with all sections, and an active and useful citizen is gone from us.

A good story is going the rounds just now, and bears re-telling. A certain country baker had some alterations carried out to his bakehouse, and amongst other things a new oven was constructed, and in due course used. To the surprise of the worthy baker, who had put in a number of barm-bracks, these came out, bearing certain mystic inscriptions, which on closer examination were deciphered as "Sacred to the Memory of," "Requiescat in pace," "In loving memory of." The mystery was soon solved. The sacrilegious contractor had economically utilized the headstones of a demolished church for lining the oven!

The movement in favour of the licensing of architects in New York seems to be gaining favour in that State, under the advocacy of the best members of the profession.

We regret to observe from the official communication of the Board of Technical Education, which has been sent to us, that the Board have met with but little support from quarry owners in their endeavours to make better known the fine building stones and the marbles of Ireland at the Glasgow Exhibition. The lack of business capacity in such matters in Ireland is sometimes appalling.

Mr. Nevil has just purchased Mount Shannon, the historic home of the Earls of Clare. Mount Shannon is picturesquely situated in County Limerick, and is a fine old place, with beautiful walks and drives through the park, which extends for about eight miles. The Earldom of Clare became extinct on the death of the third holder of the title in 1864. The first Lord Clare was the well-known John Fitzgibbon, Lord Chancellor of Ireland, who played an important part in the passing of the Act of Union, and his town house was a splendid mansion in Ely Place. He was buried in St. Peter's Churchyard, Dublin.

Mr. T. M. Deane, M.A., is the architect for the Irish Pavilion at the coming Glasgow Exhibition, and his design is appropriately a rendering of the time-honoured Irish thutch, now fast going out of favour—more's the pity. Mr. Deane has also been appointed the architect for the Queen Victoria statue, to be placed in the courtyard of Leinster House. In his hands, we rest assured the architectural treatment will be worthy of the memory of our beloved Queen. It is right, too, that Mr. Deane should be the architect of this work, because it will be surrounded by those splendid conceptions of his, the National Library and the Museum.

The late Bishop of London, who dearly loved a good story, recently (says the "Evening News") told the following at a Church gathering:—He said that he remembered a lychgate in front of a beautiful church, which had been restored and made very nice. There was painted over the door—"This is the gate of heaven," and underneath was a large notice—"Please go round the other way."

Another story, which though an old one, we never remember to have seen in print:—The War Department, as our readers are aware, never contract in the ordinary way, but have their own "schedule of prices." Contractors are paid by this, either at par or at a stipulated percentage increase. A certain C.R.E. was desired to report on the applicability of these rates to local conditions. The C.R.E. sent for his principal contractor and besought his help. That worthy man readily agreed. The items were taken seriatim. "Does that pay you," quoth the Colonel; "No," says the builder. "Does this?" "No" again, and so on till the list was exhausted. The officer thanked the builder for his help, and added, "But now, may I ask you, Mr. A., how is it that if none of these prices pay, you who have done nothing for years but War Office work, have thrived and grown rich on it?" "Why, sure it's all the items that are charged and paid for, but never done, that gives us the bit of profit," was the reply which the worthy officer probably did not embody in his report.

THE
ARCHITECTURAL



ASSOCIATION
OF IRELAND

ARCHITECTURAL ASSOCIATION OF IRELAND.

A general meeting of this Association was held at the Grosvenor Hotel on Tuesday evening, the 5th inst. The following resolution was proposed by Mr. R. M. Butler, and seconded by Mr. F. G. Hicks:—

"That the Architectural Association of Ireland, in general meeting assembled, desire to record their sense of the great loss which the nation has sustained by the death of Her Majesty Queen Victoria, and their sympathy with His Majesty King Edward VII. and the Royal Family in their bereavement."

The resolution was adopted in silence, the members standing.

Mr. P. J. O'Reilly then delivered a lecture dealing with the history of Mont St. Michael in Normandy, and descriptive of its numerous features of architectural interest. The lecturer dealt with his subject in a most fascinating manner, and illustrated it by means of upwards of 60 most excellently prepared lantern slides, which were admirably displayed.

A vote of thanks to the lecturer, proposed by Mr. E. Bradbury, and seconded by Mr. J. Holloway, was passed with acclamation.

The ninth technical demonstration of the above Society was held at the sanitary engineering works of Mr. William Baird, Lower Abbey street, on Friday, January 25th. There was a very large attendance of members. Specimens of iron and stoneware drain pipes were shown, with their various joints, and the appliances for testing them, both by smoke and water. The connections of lead, iron, copper, and gunbarrel pipes were made before the members, and attracted much interest, as did also the various systems of hot water supply and heating, explained by means of diagrams and small scale models.

At the conclusion of the demonstration the members were entertained to tea. In the unavoidable absence of the President, Mr. L. O'Callaghan proposed a vote of thanks to Mr. Thomas Baird, who had given so much time and trouble in making a difficult subject instructive and attractive to the members. The vote was carried with applause.

In consequence of the death of H.M. Queen Victoria, it has been decided not to hold the annual dinner this year.

A.A. Notes remarks:—"We feel sure that all the members of the A.A. will join us in offering our sincere sympathy with our well-known and popular past President, E. W. Mountford, at the great loss he has lately sustained by the sad death of his wife." Those members of the Irish Association who have taken part in the annual excursions will heartily join in this expression of condolence with Mr. Mountford, whose genial presence so often helped to render the social side of the excursion pleasant.

At the next general meeting the Committee will submit to the members certain proposed alterations affecting the rules governing the admission of members to the Association.

PUBLIC WORKS IN EGYPT.

An interesting report appeared in a recent issue of the *Times* dealing with the administration of the Egyptian Public Works Department. Mr. A. H. Perry, whose department controls an expenditure of some £400,000, called attention to the difficulty of finding competent assistants for the architects' department, and Sir William Garstin complained that young architects are unwilling to come to Egypt.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

A general meeting will be held to-morrow (February 14th, 1901, when the following matters will be submitted to the members for consideration:—1. Vote of condolence addressed to His Majesty King Edward VII. on the death of Her Majesty, Queen Victoria, patroness to the Institute. 2. Proposed amendment of the law of Ancient Light. 3. Formation of an affiliated society in Ulster.

THE INSTITUTE OF CIVIL ENGINEERS.

The meetings will be resumed on Tuesday, the 5th February, at 8 p.m., when Mr. Mansergh ((president) will move the adoption of an Address to the King. A paper on "The Present Condition and Prospects" of the Panama Canal Works," by James Thomas Ford, M. Inst. C.E., will subsequently be submitted for consideration.

DEPARTMENT OF TECHNICAL EDUCATION.

THE GLASGOW EXHIBITION.

The following memorandum has been officially communicated to us:—

The preparations for the exhibition of Irish industrial products at the Glasgow Exhibition, which the Department of Agriculture and Technical Instruction for Ireland have in hands, are, we understand, progressing most satisfactorily. In one respect, however, namely, exhibits of mineral and stones, the response to the Department's circular has not been commensurate with the extent and varied nature of these Irish resources. The Department, therefore, hope that their endeavours to bring Ireland's mineral resources to public notice will receive more adequate support. Great Britain requires large quantities of materials such as are enumerated in the list given below. Provided prices are quoted which will enable business to be done, there is no reason why a portion of the trade at present going to the continent should not come to Ireland.

The owners of minerals and stones are now informed that the Department are prepared to receive offers of specimens of large possible output, under the following heads:—Lead, copper, iron, and silver ores, hematite coal, including anthracite, asbestos, plumbago, red ochre, yellow ochre, barytes, anixite, sulphur, emery, gypsum, marbles, granite, limestone, soapstone, bathstone, hones, and grindstones, flags, slates, bricks, tiles, pottery, clay, moulding sand, fire clay, rock salt.

Intending exhibitors are requested to adhere to the following regulations:—

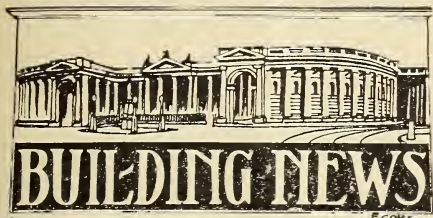
1. The analysis of mixture to be arranged for by the proprietor of the deposit.

2. Each specimen of polished marble and granite must be of uniform size, *i.e.*, 3 ft. high, 2 ft. wide, and not more than 1½ inches thickness; and, where possible, shown in rough and finished state.

3. Each specimen of coal or ore must not be less than 1 cubic foot.

4. Blocks of building stones to be about 1 foot cube, trimmed on one side. Bricks and slates to be of standard size.

In all cases the following information must be attached. Price free on board, nearest railway station, nearest seaport, estimated extent of quarry or mine, possible output per week.



Ballaghaderreen—Mr. W. H. Byrne has prepared plans for the completion of the tower and spire of the R. C. Church.

Ballina—A new Diocesan College for the Most Rev. Dr. Conmee, Bishop of Killala, is to be begun shortly. Tenders are invited for 1st March. Mr. W. H. Byrne is the architect, and Mr. Andrew Bruntz the surveyor.

Belfast — Mr. HORACE PLUNKETT ON TECHNICAL EDUCATION. Speaking at a public meeting, Mr. Horace Plunkett said these lectures were not in themselves technical education, but simply a means of bringing before them in a popular fashion the general aims of technical instruction. They must be alive to the changing conditions of industry, and alert to adopt their system of education and processes of production to meet them. Belfast had grown in a manner quite unfamiliar in this country, and it had developed an industrial and commercial life which had been the astonishment and admiration of the world. The pre-eminence of the city was founded upon the character and intellect of its people, and he believed that the time would come when to those qualities must be added certain educational advantages which had enabled other nations to keep up with, and in some cases to overtake them, in the world's market. They in Belfast had at least the excuse that the busy life of the past century left them little time to grasp the educational necessities of the situation. But they were not alone in that respect. The admirable system of organised education, commercial and industrial, which countries like Germany and the United States possessed, enabled them as England's commercial rivals, to endanger a supremacy which, till within the last decade or so, was unquestioned. They must now recognise that tradition and rule of the thumb must be replaced by accurate scientific knowledge, carried out and put into operation by men whose intelligence had been aroused and trained to understand as well as execute their work. Those of them who had become advocates of technical education, and who saw what a wise and far-seeing economy it was to tax themselves for the purpose of founding a great Technical College in Belfast, must each do one man's part to foster and stimulate that public spirit—that informed public opinion—which would enable them living in a country which, with all its drawbacks and misfortunes, has from time immemorial had a passion for education, to succeed in the great industrial struggle.

Blackrock.—A letter was read from the Local Government Board, stating that with reference to the proposal to use two of the artisans' dwellings for a temporary Technical School, they were of opinion that where dwellings have been erected under the Housing of the Working Classes Act, and which were not all occupied, one or two of them could be utilised for the purpose mentioned, so long as it appeared that there was a likelihood of such houses being required by suitable tenants belonging to the working classes.

Cork—Professor Lyon recently delivered a very instructive lecture on "Technical Education," at the Town Hall. Active steps to push technical education are being taken, and a committee has been formed with that object.

NATIONAL MONUMENT.—A substantial sum has been collected by the Cork Young Ireland Society.

The City of Cork Steam Packet Company are adding largely to their goods stores, having taken over the yard held by Deaves Brothers, timber merchants. The work is being carried through rapidly under the contractor, Mr. E. Mullany, Cork.

Dublin.—The new Parochial Hall of St. Mary's Parish was opened by His Grace the Archbishop of Dublin, on the occasion of the social reunion of the parishioners. Mr. Jno. North, one of the churchwardens, made a statement of the progress of the various parish organisations, after which His Grace, who was received with loud applause, addressed the meeting at some length, and congratulated the parish on its present prosperous position, and on the hearty and determined manner in which the people of St. Mary's had brought about, under the Providential help of the Great Head of the Church, the great changes which had taken place during recent years. Several resolutions having been proposed and seconded, Mr. North, addressing the Archbishop, said that the members of the Select Vestry were anxious to testify, even in a slight way, the feelings of esteem and regard they entertained for the Rector who had inaugurated and most successfully carried out a praiseworthy effort to clear off the debts on the parish before the opening of the new century. Mr. Jennings had been untiring in his exertions to effect this object, with the result that the commencement of the year 1901 saw St. Mary's Parish free of the old debts incurred during recent years.

His Grace then, at Mr. North's request, handed Mr. Jennings a massive silver inkstand of very handsome design, specially manufactured by Messrs. West and Son, Dame street.

It is hoped soon to make a start soon with the Victoria Eye and Ear Hospital, the site for which is on Adelaide Road. The architects are Messrs. Carroll and Batchelor, and we shall shortly illustrate their design.

Messrs. Beverley Smith and Co. are about putting up new furniture storage rooms and a caretaker's cottage at the rear of York street. Mr. R. M. Butler is the architect.

The new premises of the Book Repository in connection with the Church of Ireland Training College, Kildare street, for which Mr. T. M. Deane is the architect, are almost finished. Messrs. Millar and Beatty's new premises in Dawson street, by the same architect, are finished.

NEW TRAINING COLLEGE, MARINO, CLONTARF.—The Christian Brothers make an appeal for funds to enable them to begin the new Training College at Marino, Clontarf. The present building is, they state, fast falling into decay, and the proposed new structure is an absolute necessity. It is expected that building operations will shortly be begun. It is to be hoped that the Order will not cause the historic old house to be demolished.

Kingstown.—The Kingstown Technical School is likely, before many weeks have passed, to become an accomplished fact. The Council have determined to postpone the erection of an elaborate and costly building for a year or two longer, although already promised a site by the lord of the soil. Meanwhile they have taken two houses in Upper George's street, which will serve as temporary premises, and enable them to form an idea of the extent of the demand for technical instruction in the locality. The Rev. Father Murray, of Glashule, has kindly presented the school with a piece of ground close to Glashule Schools, for the purpose of teaching practical horticulture, and this subject, therefore, will be included in the course of instruction. No time is being lost in arranging the details of the programme, and it is hoped that the school will be opened by Easter at least.

Larne.—The Town Surveyor (Mr. William Pinkerton) submitted the following plans, which were passed:—Plans for five dwelling-houses for Messrs. William McNeill and Sons, Princes street; plans for eleven dwelling-houses for Messrs. J. and S. Drummond, New street, off Meadow street, Circular road; plan for dwelling-house for Mr. Thomas Moore, Bank road; plan of a chimney for Mr. James Smith, Circular road; plans of a new street off Pound street to the Grammar School grounds were submitted by Mr. Edward Coey, Herville, Belfast, and unanimously passed. Mr. Thos. Carson, Pound street, submitted plans of ten dwelling-houses to be erected on the proposed new street. The surveyor said he could not approve of the plans until he saw the levels of the street. Mr. Ferris said he believed the

plans should be approved of by the Council. Mr. Beatty and Mr. McWilliam concurred. Mr. Ferris moved, and Mr. Beatty seconded, that the plans should be passed. The surveyor said the plans did not comply with the Council's by-laws. Mr. McConnell asked what use there was of the Council having by-laws if they were not adhered to. The plans were unanimously rejected.

Limerick—A strike has taken place in the carpentry trade in Limerick for increased wages. The present standard rate of pay is thirty-two shillings weekly, and the demand now made is for an increase of two shillings to bring the wages equal to what the carpenters are paid in Cork. The local society is also seeking to limit the number of apprentices in the trade, allowing only 1 apprentice to 6 journeymen. A number of employers have granted the men's terms, but others declined to do so, the latter's employes striking work. The local carpenters' society has issued notice of the strike.

Limerick—The following letter was received from the Agriculture and Technical Education Department:—

"Dublin, 31st January, 1901.

"SIR,—I am directed by the Vice-President to advert to my letter of the 20th July last intimating that the Board of Technical Instruction, at a meeting held on the 18th of the same month, had concurred in the proposals submitted to them as to the division of the sum of £25,000, which was allotted for the purposes of Technical Education in the six County Boroughs, in proportion to their respective populations in 1891 would result as follows:—Dublin, £8,877; Belfast, £9,894; Cork, £2,730; Limerick, £1,340; Londonderry, £1,203; Waterford, £950. Owing, however, to the special clause which was introduced into the Dublin Corporation Act, 1900, the Department are empowered to apply from the portion of the sum of £55,000 applicable elsewhere than in the County Borough, such a sum to provide for technical instruction in the added area as may be considered reasonable, having regard to all the circumstances of the case. As this sum of £8,887, allotted to the County Borough of Dublin, represents an item of £8,695, to be assigned for the purposes of technical instruction, in respect of each unit of the population in 1891—245,001—the Department considered it only equitable that the inhabitants of the added area should be in this regard subjected to the same treatment as those who reside within the old city boundaries. It being understood that the population of the added area was 19,247 in the year 1891, the Department have accordingly decided to increase the proportionate amount assigned to Dublin by the sum of £697, thus bringing the total grant available to that borough up to £9,514. But as it has been deemed advisable to reserve 25 per cent. of these total amounts with a view of providing for any adjustment that may become necessary when the census returns for 1901 are received, the amount available from public funds for the purposes of technical instruction in such County Borough for the present year will therefore stand at the set sums indicated in the subjoined table:—Gross amount: Dublin, £9,574; Belfast, £9,894; Cork, £2,730; Limerick, £1,346; Londonderry, £1,203; Waterford, £980. Twenty-five per cent. retained:—Dublin, £2,394; Belfast, £2,474; Cork, £682; Limerick, £336; Londonderry, £301; Waterford, £237. Net amounts available:—Dublin, £7,180; Belfast, £7,420; Cork, £2,048; Limerick, £1,010; Londonderry, £902; and Waterford, £713.—I am, sir, your obedient servant,

"T. P. GILL."

Lisbellaw—At a meeting at Lisbellaw, it was finally decided by Mr. J. G. V. Porter to proceed at once with the improvements at the entrance to Lisbellaw Church, which he most generously proposed to do at his own expense some short time ago. Plans have been drawn, and the consent of the Bishop, Representative Church Body, Select Vestry of the Parish, and all concerned, have been obtained. Mr. Porter proposes taking down the present gate entrance, erecting new cut stone piers, putting on new wrought iron gate with lamps on piers, building stone basement at each side of gate, with iron railing on top same as gate, and enlarging the churchyard at new tower, so as to leave more

space for avenue to new Vestry-room. The work when carried out will be a vast improvement, not only to the Church, but to the village.

Nenagh—The Nenagh Urban Technical Instruction Committee, of which Very Rev. Dean White is chairman, have made arrangements with the Department of Agriculture and Technical Instruction for Ireland for the delivery of a series of weekly lectures by the Department's lecturers, on the advantages of technical instruction and its relation to various trades and professions. The first lecture will be delivered by Mr. R. Caulfield Orpen, C.E., on the "Building Trade; what technical instruction can do for them," and will be illustrated by lantern exhibitions, and drawings on the spot. The other lectures of the series will be "The Electric Current and its Industrial Application," by Mr. William Tallow, C.E.; "Science in the Household, or Technical Instruction for Women," by Miss O. G. O'Connor-Eccles; "Art in Application to Industry," by Mr. S. W. Rolleston; "Technical Instruction; Its Aims, its Merits, and its Utility."

Sligo—LABOURERS' COTTAGES.—Mr. McGowan, in the course of a lengthened statement, at a recent meeting of the Corporation, referred to the quantity of waste land in or about Emmet Place and the Pig Market. He suggested that the waste ground be used for the purpose of erecting labourers' cottages thereon.

Mr. Connolly—It is a capital idea.

Mr. McGowan said that a long as there were house owners on the Corporation there would be no cottages built.

Waterford—At a meeting of the Waterford Corporation, held on July 3rd, 1900, a representative committee was appointed as a Technical Instruction Committee, with directions to frame a scheme for technical instruction in the city to be submitted to the Corporation. In the course of their report, the Committee stated:—

"Mr. Blair, the Chief Inspector, came to Waterford in response to this request, and on the 12th day of September, 1900, met your Committee and discussed with them at length the means that were available, and the steps that should be taken to devise a complete scheme of technical instruction in the city, such as would provide opportunities and means of instruction for every class of student that might be expected to benefit by them, and which the Department could approve of. Mr. Blair gave most useful information to your Committee, who acknowledged themselves much indebted to him for the assistance he rendered them. It was agreed that the two main objects should be aimed at: (1) The establishment of a thoroughly efficient Central School; and (2) the raising of the standard of technical instruction generally in the city. The penny rate may be taken as producing about £200 a year. The equivalent grant from the Board of Education would, therefore, be about £200 a year, and though the exact amount of the Technical Instruction Grant for the current financial year is not yet ascertained, it may be assumed to be about £950, so that the expenditure for technical instruction may for the present be estimated approximately at £950 per annum, but for the future it will amount to about £1,350 a year. A probable source of income will come from South Kensington. Your Committee recommend the Council to make the following grants, same to be for one year only, and for equipment purposes:—£300 to the Christian Brothers' Schools, Mount Zion, to fit up and equip a laboratory and a Technical Instruction room; £150 to the Christian Brothers, Waterpark, to fit up and equip a laboratory; £100 to the Ursuline Convent, and £100 to the Ferrybank Convent, also to fit up and equip a laboratory. We believe that it is advisable to establish, with the least possible delay, a Central Technical School, and with that object in view we would have it to be fully understood that the foregoing grants are only of a temporary nature."

Mr. M. Hearne, of Waterford, has obtained the contract for the alterations and additions to the Schools and Convent of the Little Sisters of the Poor at Waterford. Mr. W. H. Byrne, of Dublin, is the architect.



Armagh—In a letter to the *Armagh Standard*, Mr. H. C. Parkinson calls attention to the workings of the Ulster Sanitary Association as follows:—

"SIR,—In the *Standard* of 4th December last a letter of mine appeared, in which, after directing attention to the circulars sent to me in the name of the Ulster Sanitary Association, I made the assertion—'This engineer is J. Finlay Peddie, who, for all practical purposes, is the Ulster Sanitary Association, and the Ulster Sanitary Association is J. Finlay Peddie.' Since making that statement I have received unsolicited information, not then in my possession, which fully proves my assertion to be correct. It is taken from an announcement made in the *Northern Whig* of the 18th, 19th, and 20th of December, 1895, of which the following is a copy:—'Ulster Sanitary Association.—The Council of this Association beg to announce that they have transferred the business to Mr. J. Finlay Peddie, engineer, and they trust the public will extend the same patronage to him which they gave to them. The Association will be dissolved under the directions of the Executive Committee, 9 Donegall Square West, Belfast, 17th December, 1895.'

"Now this reminds me that in 1897, while I was getting sanitary work carried out at the infirmary here, and before same was completed or tested by me, this J. Finlay Peddie, on the 2nd of August of that year, came and tested said work without giving me any notice whatever, I having no knowledge of him doing so, and no intimation whatever from the three or four members of the committee who were directing in the matter, and when I demanded a reason for this disgraceful treatment, I was informed that the committee had joined the Ulster Sanitary Association, and were taking advantage of the benefits of such membership—that is to say, the committee of the Armagh county infirmary joined an association in 1897, which association died a natural death in 1895. What strong evidence of profound business research, and even yet we have circulars from this defunct association warning us of the dangers of defective sanitation, and of the advisability of consulting its disinterested engineer, Mr. J. Finlay Peddie, the gentleman who for some years has been levelling and otherwise doing work in connection with the Armagh sewerage scheme. In fact, the antics of this Ulster Sanitary Association and its transmigrating promoters are to me a mystery, and like the Armagh sewerage scheme,

"The more I muse therein,

The mistier it seemth."

"H. C. PARKINSON."

Ballymena—THE ELECTRIC LIGHTING.—Mr. McIlroy said for the benefit of the members of the Council who were not present at their last committee meeting, they had decided upon calling a public meeting of the ratepayers to consider this question, when the Council would submit a scheme as to whether they would purchase the gas company's interest in their works or go on with the electric lighting of the town. They decided that the fairest plan would be to leave the question to the public to decide, and they were prepared to adopt either of the two schemes that they thought best. He thought that as that was the first time that the matter had been discussed publicly that that was the time and place to go fully into it, as it had been thrashed out fully in committee.

THE SMALL HOUSES ACQUISITION ACT.

Mr. Samuel Millar, Princes street, appeared before the Council in regard to purchasing a house under the above Act.

The Clerk said the provisions of the Act were adopted by the Council some months ago, and Mr. Millar wanted some idea as to the advantages to be derived under it.

Mr. Millar said he would like to know what rate of interest he would have to pay.

Mr. Craig said he would have to pay about 5 per cent.

Mr. Barclay proposed that the supplying of the information desired be left in the hands of Mr. O'Hara.

Mr. O'Hara said Mr. Millar would have to pay about 5 per cent. for thirty years, at the end of which time the property would be his own. The Council would advance four-fifths of the purchase money, the applicant supplying the remaining fifth; whereas if he bought ground on which to build he would require to supply the whole of the money until such time as the house was fit for occupation, when he could make a formal application for a loan. The idea, he said, was not to supply money for building houses, but to supply it to the ratepayers to purchase existing houses to live in.

Mr. Burns said they couldn't lend money on a house until it was built.

The Clerk said it was well for the public to know that there was such a thing.

Belfast—TYPHOID FEVER.—STRONG COMMENTS IN THE "LANCET".—Dr. John Barron, who is a Town Councillor of Belfast, as well as a medical practitioner, has, says the *Lancet*, forwarded to us a report of an interview granted by himself to a representative of the *Belfast Evening Telegraph* of June 23, 1900, on the subject of the prevalence of typhoid fever in Belfast. Dr. Barron does not consider that either the water or the milk is at fault in the main, though, of course, either may be contaminated accidentally. His view is as follows:—"Typhoid fever is being engendered during the wet seasons of the year by the permeation of the soil with sewage matter, and excreta entering it through the defective pavement of yards and passages, and by leakage in sewers. In the hot weather, he says, this sewage-polluted soil becomes converted into dust, which is blown about, carrying infection everywhere. What is wanted is careful protection of the ground in yards, passages, privies, ashpits, and the like, while the sewers should be kept in perfect condition so as to avoid leakage. Dr. Barron, however, believes that dry earth-closets would be safer, because sewers are almost sure to leak. In a speech before the City Council on August 1, 1900, Dr. Barron advocated constant flushing of yards and passages, and that the sewerage system should be improved. We have already dealt upon the scandalous state of matters as regards sanitary conditions which characterised Belfast in the reports of our Special Commissioner, who, as a result of his investigations in 1898, revealed an appalling state of matters with regard to bad drainage, while the Commission of the previous year showed the existence of 20,000 houses having no back passages, and in which it was necessary to carry the contents of privies and ashpits through the living rooms. Although we cannot agree with Dr. Barron's theory in its entirety, yet the pollution of the soil doubtless prepares the way for the contamination of water, which probably occurs more generally than Dr. Barron appears to think, and we certainly cannot allow that efficient sewerage is impossible. Apparently Dr. Barron does not think so either, for, despite what he is reported to have said in the interview, he recommended improving the sewerage in his speech before the Council. Dust, as we have recently been forcibly reminded by events in South Africa, is a potent cause of typhoid infection, and it is not impossible, given a polluted soil such as exists in Belfast, that infection is spread in this way. But we are still of opinion that a proper system of sewers and of strict building laws, which shall be enforced without fear or favour, would in a short time render Belfast a healthy city.

Charlestown — THE RAILWAY QUESTION.—On Sunday, 3rd inst., a largely-attended meeting of the U.I.L., summoned by placard, was held in the Hall, Charlestown, to discuss, amongst other matters, the attitude that ought to be taken towards the movement of the Great Southern and Western Railway Company to acquire running powers over the Midland Great Western Railway from Athenry to Athlone.

Crosshaven — THE PROPOSED EXTENSION RAILWAY.—The Chief Secretary has informed Mr. E. Crean, M.P., that the Board of Works have this matter at present before them, and that they are making preliminary enquiries. We also understand that the Commissioners of Public Works have informed the company that they hope shortly to send competent persons to investigate and report on the undertaking.

Kerry—Kerry County Council had under discussion an application from the Irish Electric Railway Company for permission to construct a railway connecting Castletownbere with Kenmare. Mr. Joynt, for the promoters, explained that they first intended asking for a small guarantee, but abandoned that, as it would involve the district for working expenses. The construction of the line would mean an expenditure of £700,000, which would be of immense benefit to the district. The Government would contribute to the construction, as they had at big expenditure constructed a first-class naval base at Castletownbere. Evidence was given for the promoters by Mr. Fraser, engineer, and others. For Lord Lansdowne evidence was given that the proposed line would run through Lansdowne Demesne and deer park. Replying to the councillors, Mr. Fraser said the people of Kenmare objected to the line running through the streets of Kenmare, but if Lord Lansdowne consented, the promoters would deviate to avoid the street. After a protracted discussion, several councillors advocated the scheme, which was unanimously approved of, subject to the report of the County Surveyor.

Kilkenny — THE PROPOSED CLOSING OF BRIDGES IN THE CO. KILKENNY AGAINST LOCOMOTIVE TRAFFIC.—On Wednesday, Mr. P. C. Cowan, M. Inst. C.E., Chief Engineering Inspector of the Local Government Board, held an inquiry at the Workhouse, concerning the proposal of the County Kilkenny County Council to close Granagh and other bridges against locomotive traffic.

Mr. Colfer, who appeared against the proposal, said—I will give engineering evidence to the effect that this Granagh Bridge is at present quite strong enough and quite capable of bearing any pressure put upon it by any traction engine in the neighbourhood. I also intend to show by evidence of witnesses that the prohibition of the use of this bridge by traction engines will be attended by very serious consequences to a large number of the people in the district. If you have evidence to show that the bridge is able to bear the burden you ought not to approve of it on the mere suggestion of a possible failure of its not being able to bear the weight at some indefinite period. The first witness I will examine will be Mr. Ryan, a well-known engineer of considerable standing.

Mr. John H. Ryan deposed—I am a member of the Institute of Civil Engineers, and have been practising for about the past 25 years. I went out there about the time of low water; I had a boat at the side of the bridge, which I examined underneath from the water line, and the whole structure as well as I could. The bridge appears to be a very old structure; the arch stones are apparently sound and good; the front arch stones and interior arch stones appear to be set in what is called rubble masonry; the sheeting appears to have been patched from time to time, and at the corner of the arch some small stones are dislodged. There did not appear to be any weeping from the roadway above which would indicate any considerable flaws in the masonry of the arch.

The Inspector—Would they affect the strength of the bridge?—I do not think so. The span of the bridge at the

water line is 48 feet, and the height to the key-stone from high water mark is 17 feet; the arch is practically semi-circular. I waited for some time until a traction engine came along with two unladen wagons; I sat on the parapet of the bridge, and Mr. Lane, the manager of the Co-operative Society, on the other; there was some slight tremor, but nothing beyond the ordinary.

Mr. Alexander M. Burden, County Surveyor for Kilkenny, deposed that in September last his attention was called to the state of Granagh Bridge by Mr. Bowers, one of his assistants. As a consequence of his report Mr. Poe, solicitor to the Council, was directed to draw up the bye-laws, which were now the subject of inquiry. He thought continual traction engine traffic over the bridge would shake it so much as to injure its stability.

The Inspector—It is a serious thing to close such a bridge to what cannot be regarded as extraordinary traffic.

We understand that the attempt to close the bridges has been defeated.

Omagh—Mr. J. L. Donnelly, C.E., Town Surveyor, submitted the plans of the proposed new sewerage scheme. After some discussion, the plans were submitted to a committee to report at the next meeting of the Urban District Council. Mr. M. Mullan, in pursuance of notice, brought before the Council the application of Mr. James Kerr, the rate collector, for an increase of poundage. After some discussion, the chairman's suggestion was agreed to—that a committee be appointed to go into the matter with Mr. Shields, their solicitor, to ascertain the law on the subject.

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Architecture in the Past Century.—The future historian of English architecture will probably, we think, characterise the nineteenth century more especially as the century of the Gothic revival. Although it has run its course some time ago, and gone the way of all revivals, no other movement in architecture, during the epoch in question, has lasted so long, has been the object of such general and widespread enthusiasm, and has left such a large visible impress on the architecture of this country. It belongs to the century, in fact, more fully than would appear from the mere dates of the earliest churches erected under its influence; for it was in the air, so to speak, before it took visible shape in any important building. Rickman's celebrated publication, the first methodical attempt to classify the styles of mediæval architecture, dates from 1819, and was the result of an already-existing feeling that our national mediæval architecture had been unduly neglected. Nor have we cause to be ashamed of the Gothic revival as the principal development of the outgoing century. We can see now that it was a mistake—an illusion; but it was a noble error after all, the product of a genuine enthusiasm, and it had an important and lasting effect in awakening a new interest in architecture, and removing it from the category of a respectable profession to that of an art to be passionately loved and pursued for its own sake, and not for mere lucre. And let it not be forgotten that it has left us as a legacy the finest, most picturesque, and most original public building of modern times.—*Builder*.

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The *Fermanagh Times* says, apropos of some remarks of ours on the new Town Hall at Enniskillen:—"The IRISH BUILDER contains an excellent photograph of Mr. Scott, the Architect." Several congratulations and expressions of good will have reached us from some of our professional contemporaries across the Atlantic.

The *Waterford News* says:—"I learn from a circular to hand this week that Mr. J. C. Percy, of the *Irish Wheelman* Company, has taken over the management of the IRISH BUILDER. Friend Percy may not know much about scaffolding, levels, bricks, or mortar, nor yet, I should say, has he studied the ethics of Trades Unionism, as applied to this particular branch of industry. But he generally knows what he is about, and I have every confidence that he will surmount all difficulties and place the IRISH BUILDER on a foundation as firm almost as the Pyramids, or, to bring it nearer home, of Reginald's Tower itself."

BOOKS RECEIVED.

THE CATHEDRAL BUILDERS: The Story of a Great Masonic Guild. By Leader Scott. London: Sampson Low, Marston, and Company, 1899.

Emphatically a great book! and one to engender thought. Briefly put the author, or authors,—for "Leader Scott" is the *nom-de-plume* under which a lady chooses to write—motif of the work is an effort to ascribe all great architecture of the Middle Ages to the workings of one great guild of master builders originating in the little town on the shores of Lake Como, in Northern Italy. From small beginnings, and imbibing the traditions of eastern art, this humble corporation grew, and spreading its wings all over Europe to the northernmost bounds of civilization, gave Europe all that we now designate as mediæval art, and (inferentially) the great reflowering period of the Renaissance. But chiefly of Italian art Leader Scott deals. Conscious as we, says the author, "of a vast hiatus between the decline of classic art and the uprising of the twelfth century. Where shall we look for the link between those periods?" In other words, to what source shall we ascribe the mediæval influence which, rising slowly and gathering strength as it grows, culminates in France and England in the noble cathedrals of the Gothic period, while in Italy the stages are, perhaps, less distinctly marked, yet none the less change, growth, progress, prevail, and "showing the evolution of a distinct type with its own forms, outline and ornament, owing little to Byzantine sources, to which it is commonly attributed." "We shall see that all that was architecturally good in Italy between 300 and 1200 A.D. was due to the Comacine Masters or their influence. Through them architecture was carried into foreign lands—France, Spain, Germany, and England—and then developed into new and varied styles, according to the exigencies of the climate and the tone of the people." Two lines of thought, it would seem to us, pervades Leader Scott's essay towards proof of her arguments:—first, the development of distinct forms of building and ornament from the guild, and designated "Comacine," and, secondly, an ascription of an influence on architecture that, outwardly at least, possesses little in common with the former. Here, then, to our mind, comes the weak link of the chain of reasoning. None of us doubt the existence of widely pervading guilds or bands of masons and master builders. Why, to this day there is a "masonic" instinct in the tramp masons of Ireland, and the mason's marks of the Middle Ages provide a fruitful source of study for the antiquary. What mean they—little or much? The scribings of some unlettered workman, or the mysterious signs by which he made known his identity, or his source, to his successors—who can rightly tell? And if doubt there were that organisations did exist in those early days, Leader Scott's imposing array of marshalled facts and figures sets that at rest. But how much further does this bring the authoress towards the full establishment of her theory? It seems to us that she has taken full advantage of a lady's prerogative of not giving a reason—whose answer to an unanswerable question is simply an incontrovertible "because." Who has not met such a lady? Seriously, though, the thread of theory laid down by Leader Scott is ably advocated in "The Cathedral Builders." The whole range of Italian art is laid under contribution, and this much she shows us, that the Comacini were unquestionably vastly more important as an organised body than most students have thought. Much painstaking research, based upon indisputable documentary evidence gleaned from many an obscure source, establishes much of her theory. Book I. deals with the Romano-Lombard architects—establishes beyond doubt the existence of the lodges, and much more, which space forbids our dealing with. The Comacini, and contains the Norman "Link" and the Comacini, and contains the Norman "Link" and the German "Link," both of which, to our mind, press the theory too far. Then comes a "suggestion" (a prudent reservation) on the origin of Saxon architecture, for there is neither the evidence of document, tradition, nor the buildings themselves—such as they are—to prove that they are aught but the simplest evolution of the rudest forms. Not

an iota of real evidence of the immigration of a band of cultured artists, such as the Comacini. Then we find a chapter entitled simply "The Towers and Crosses of Ireland." No Irish "Link"—for there is none—or, at least, of its existence we have no evidence or tradition. The correctness, or otherwise, of Petrie's theory of early Irish art does not affect the result one bit. If we take such a work as Zimmer's "The Irish Element in Mediæval Culture," we get such substantial evidence—not surmise—of a great Irish School of Art extending well into the Middle Ages, and a constant intercourse with the Continent, not so much for the purpose of learning as of teaching, that without venturing to lay down any positive theory, we may assume that without proof to the contrary, and this Leader Scott does not attempt to give us, Ireland unquestionably derived that wonderful art of ornament from some source which certainly was not the small guild of the Master Builders of Como.

Of the influence of the guild upon later Gothic art we see no proof. Gothic art never flourished in Italy. From first to last its inhabitants—of Lombardy, Venice, Rome—never took kindly to that severely constructive and æsthetically ascetic art, which culminated in the glories of Lincoln and Ely, or Amiens and Rouen. The single important Gothic cathedral church which Italy boasts—that of Milan—is undeniably of a distinctly Teutonic type.

Or, again, suppose we look at the churches of the la Charrente district and the earlier southern traditions of France, affinity with which might more easily be claimed for the Comacini, is it conceivable that we should witness such a development in France as the Churches of the Isle de France were the source of inspiration identical? More than that, take Lincoln, in England. French writers like M. Edouard Croquer have again and again sought to establish evidence of French influence; yet the greatest thinker of them all—Violet le Duc—declared that after careful examination he had failed to detect the smallest sign or evidence of it. No; the true reading of history is undoubtedly that the great Gothic countries of Northern Europe, each of them from small beginnings worked out its own salvation, and worked towards perfection at a time, too, when Gothic art in Italy was a sham and a humbug, more or less. Speaking of the Influence of the Comacini upon the Art of the Early Renaissance, Leader Scott seems to us to be upon safer ground. A great deal of the lovely work of that early revival of Classic Art is instinct with much of a more quickening spirit than the dead bones and dried ashes of the then forgotten Classic Art. May it not be that tradition lingered long in Italy, the home of the Comacini?

We cannot pretend in this brief notice to have given a comprehensive outline even of our own somewhat blurred impressions of this fine work and its fascinating theory. Captivating it is, and laying it down one is "convinced against one's will," only to be "unconvinced still" of much that is in it. Yet it is a book which cannot be read without learning much, very much, and no architect aspiring to be a student of his art can afford to leave it unread. The theory is so vast that it must be read in the light of history, carefully digested, and a judgment well pondered.

The illustrations are excellent and representative, and help much to a right understanding of the argument.

ELECTRICITY SIMPLIFIED, by A. T. Stewart, A.I.E.E.
W. and R. Chambers: London and Edinburgh.

This modest little work, published at the price of 1s. 6d. claims to be a hand-book to the practical application of electricity for industrial and domestic purposes, and to our mind it certainly fills a gap in the literature of the subject. The majority of architects, engineers, builders, or students desire an elementary introduction to the subject. Most books of this character proceed too much upon an assumption of a certain knowledge of the technicalities of the subject. Mr. Stewart has wisely avoided this pitfall and given us a simple, practical introduction, up-to-date, and treating comprehensively of the various purposes to which electricity is now a-days put. A model specification for electric lighting is given, and the remarks on prices and approximate estimating will be found valuable. The author devotes a chapter to electri-

city as applied to heating and cooking, and seems to us to take an over-sanguine view of the present possibilities. The experiments hitherto made have not been economically satisfactory. We have no hesitation in saying "Electricity Simplified" is the very best hand-book on the subject that has come under our notice.

"History of The Town and County of Wexford: Old and New Ross." By Captain P. H. Hore. London: Elliot, Stock, Paternoster Row.

"Silico-Calcareous Sandstones. Building Stones from quartz-stone and lime." By Ernst Stöffler, Engineer, Zurich. London: E. and F. N. Spon, 125, Strand, W.C., 4s. nett.

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LIGHT RAILWAYS IN IRELAND.

It is ten years since Balfour's Act was passed, under which a State loan or grant was authorised in connection with light railways constructed or worked by existing railway companies in Ireland, and it is therefore opportune that such a record should be made as has been prepared by Mr. Joseph Tatlow, the manager of the Midland Great Western Railway, for the forthcoming Railway Congress. Prior to this enactment, the machinery for light railways, or rather street tramways, was cumbersome, speed was unnecessarily limited, and the guarantee was by the baronies, who were called upon to make up the deficits to a sum equal to 5 per cent. on the capital paid up. The Treasury, however, returned one-half of this sum, such half not to exceed 2 per cent. upon the paid-up capital of the individual company, or an aggregate of £40,000 per annum. Under these conditions, 295¼ miles of railway were actually built before the baronies objected to the serious drain, the capital they had guaranteed being £1,240,375, while only £141,804 was found elsewhere. The result of last year's working, for instance, is that the baronies had to find £30,514, while at the same time the Treasury provided £21,972. Only one of the six lines managed to earn its own dividend—the three-mile electric line between Besbrook and Newry. Balfour's Act, passed in 1889, made State aid contingent upon an existing company constructing and working the new line; in the former Act they were prohibited from making lines. Again, it was necessary that the new railways should be approved by the Board of Works, which may also appoint a manager should there be laxity in working the line. Under this Act 15 lines, totalling 309¼ miles, have been laid, and the Government contribution seems to have reached its maximum—being £173,767, while £285,200 more has been found by baronies. Two of the lines are only now being constructed, and the result of the working of the others is not at all encouraging. The cost seems too high. Thus, taking lines at random, we find the capital to equal to £9,000 per mile for 5 feet 3 inches gauge; £5,700, £6,500, and £4,400 per mile, all of which are too high. Mr. Tatlow, who is a master of this subject, holds that there should be a clean sweep of enactments, which, although necessary and proper for ordinary railways, are unsuitable and unnecessary for, and consequently detrimental to, the construction of light railways. Thus those safety appliances which were not insisted upon for British light railways in the Act of 1866, are included in the Irish Act. Ireland has in all 604½ miles of these so-called light railways or tramways, and the burden upon her for these was £38,878 last year, exclusive of £16,046 for guarantees for ordinary lines, and excluding the large Treasury payments. The lines are, however, of great advantage, although non-paying; they distinctly tend towards the improvement of the condition of the people. The fishing industry has been developed, produce and live stock have found new and better markets, and wild and romantic scenery has been rendered easily and comfortably accessible to the tourist, for whom big hotels have been built. We hope, therefore, that some means may be found of lessening initial cost and working expenses, so that the boon may be extended without undue financial burden.

SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp. Excavator and Bricklayer.

(Continued.)

- Pointing and Limewhiting Internal Walls.** The walls of kitchen, larder, coats, and water closet in yard to be finished with a neat flat joint, pointed, and twice limewashed.
- Over-sailing Courses to Eaves Gables, and Chimneys.** To be formed of square and moulded bricks, as shown on the drawings, with all necessary returned angles and mitres as required, and set in cement, the joints raked out and pointed to match facings.
- Plinth Course.** To be formed with splayed brick, with 2½" projection, those for chimneys to be purpose made, 6½" long to avoid cutting to flues.
- The plinth bricks to have all necessary internal and external mitred angles. The whole to be set in cement; the joints raked out and pointed to match the facings.
- Bed and Point Frames.** Door, sash, ventilator, and other frames, are to be bedded in hair mortar, the joints raked out and pointed in cement and sand.
- Bedding Plates and Sleepers.** All wall plates and sleepers to be well bedded in hair mortar.
- Rake and Point lead Flashings.** Rake out for, and point, lead flashings with pure cement.
- Trimmer Arches.** Put to hearths on upper floor, half brick trimmer arches in cement, the haunches to be filled in with fine cement concrete, 1 to 4.
- Smoke and Extract Flues.** Smoke flues to be 14" x 9", and to be properly pargetted with cow-dung mortar, and cored on completion.
- The extract flues to be 14" x 4½", and to be rendered smooth in cement.
- Coping to Yard Wall.** To be Jennings' Vitrified Stoneware, with all necessary angles, mitres, and stopped ends bedded and jointed in cement.
- Filing in Porch.** To be encaustic tiles of approved pattern, of the prime cost value of 5s. per yard superficial laid and jointed in cement (on a bed of concrete as before described), with border and including all cutting as may be required, cleaning off on completion and washing with skimmed milk.
- Ventilation Under ground floors where shown on the drawings, or as may be directed, and build in galvanised cast iron strong air bricks, 9" x 3", and render the openings with a coat of cement trowelled smooth.**
- Leave apertures, 9" x 6", about 5 feet apart, in sleeper walls for the purpose of ventilation.
- Fresh Air Inlets to Rooms.** Form and render in cement an opening through the external wall of sitting and waiting-room, kitchen, larder, and in each bedroom, and provide and fix on the inside a 9" x 6" iron louvred ventilator, and a 9" x 3" cast iron galvanised hinged grating on the outside, of such pattern as may be approved.
- The opening to be covered with a strong slate.
- Outlets for Foul Air.** Provide and fix at the bottom of extract flue in each room, an up-cast iron louvred ventilator, of such pattern as may be approved. The top of flue to have 12" x 4½" terracotta air grating, and stone cover and sill, as shown on the drawing.
- Sink in Kitchen.** Provide and fix a white enamelled sink, 3' 0" x 1' 9", fixed on wooden bearers as provided in Carpenter.
- Setting Range and Grates.** Set the range in kitchen, and the grates in sitting, waiting, and bedrooms, with all necessary brickwork, firebricks, lumps and fire clay.
- Workmanship Generally.** Perform all requisite workmanship in brickwork, such as forming all door, window, and other openings, fair cutting to gables, etc.; rough cutting to skewes and over arches, etc.; cutting chase for shelves, etc.; forming weatherings, splayes, etc.; also cutting out for pinning in ends of slate slabs, door, and window sills, rails, corbels, joists, girders, mantels, etc., etc., and making good to same as required.



The late SIR THOMAS DEANE, Architect.
(Grandfather of Mr. T. M. Deane).
From a Drawing by Frederick Piercy.



The late BENJAMIN WOODWARD, Architect.



The late SIR THOMAS NEWENHAM DEANE, R.H.A.,
Architect.

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Advertisements.—Copy for Advertisements should be forwarded by Monday, otherwise insertion cannot be guaranteed.

NOTICE.

The subscription to the "*Irish Builder*" is now reduced to 4/4 per annum (postage paid). Subscriptions are payable in advance, and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street, Dublin.

With this issue we enclose in each copy a couple of tendering result forms, and we shall feel extremely grateful to our readers if they will aid us by filling up these forms with the results of tendering for any works with which they may be connected, or for any other local matters of interest.—Ed.

VOL XLIII.

JANUARY 13, 1901.

No. 986.

THE MAIN DRAINAGE AND THE BRIDGES.

Lately there appeared in the *Irish Times* the following letter from Mr. John Byrne regarding the last contract in connection with the main drainage scheme:—

"SIR,—In reference to the reported proceedings of the Corporation on yesterday, permit me to say that the plans for erection of the new Carlisle Bridge, as approved of by the Corporation, provided for the construction of a tunnel in the foundations below the level of low water to carry two syphons of a main drainage scheme.

"I was then a member of the Corporation and chairman of the then Main Drainage Committee, and the original plans thus adopted ought now to be found in the Muniment Room at the City Hall with the other records of the Corporation.

"The Town Clerk informed me, notwithstanding the statement of the Lord Mayor, that he made search for them, and could not discover them. What, therefore, has become of them?

"If the tunnel was not made, it would be interesting to discover how the cost estimated for it—viz., £5,000, out of £65,000 borrowed for the bridge, was applied.

"In the rebuilding of new Essex Bridge provision was made at each end for the passage of the main drains and widening the roadways by 16 feet, but it appears the new lights of the modern Corporation overlooked the matter and considered Essex quay required no widening, as they now sneer and laugh at the idea of the syphons tunnel, which would have saved the citizens a large portion of the £125,000 in the contract adopted at yesterday's meeting.—Yours, etc.,

"JOHN BYRNE.

From what we have learned since the publication of this letter, there can be no doubt but that Mr. Byrne is perfectly right. At the time to which he refers Mr. Bindon Stoney, I.L.D., was the engineer to the Port and Docks Ward, and known as one of the very ablest engineers of the day. His phenomenally successful Liffey wall extension, and his famous book, which has become an engineering classic, "*Stoney on Strains*," contribute to have made his ripe judgment full of authority. Dr. Bindon Stoney prepared the plans to which Mr. Byrne refers—namely, designs for Essex and Carlisle Bridges—and there can be no question but that openings mentioned were provided for in the designs, and why not now adopted for the drainage, as originally intended, it is very difficult to see. As Mr. Byrne pertinently observes, "If the tunnel was not made, it would be interesting to know how the cost estimated for it—£5,000 out of £65,000 borrowed for the bridge—was applied." This is an enquiry which naturally suggests itself.

The works were designed by Dr. Bindon Stoney as engineer to the Port and Docks Board, and were carried out under his supervision, consequently there is little cause for wonder at the futile search of the excellent Town Clerk in the Muniment Room of the Corporation.

We believe that at the time he made the designs in question, Dr. Stoney had the advantage of seeing James Gandon's original design for Carlisle Bridge, and considered his design for coffer dams quite remarkable.

It is not generally known that Gandon made a design for Carlisle Bridge as a triumphal "Nelson Monument." A very beautiful little drawing of this is in the possession of the Royal Hibernian Academy.

Sample made a very curious plan of old Essex Bridge, and a copy of this is in the possession of Sir Thomas Drew, R.H.A.

BUILDING BYE-LAWS.

Our contemporary, that splendidly produced weekly journal *Country Life*, forwards us the first of a series of articles on the subject of "Building Bye-Laws." The portion referred to deals chiefly with the adoption of the Local Government Board model bye-laws by rural districts, and it contains some very pregnant observations, many of which apply with added force to Ireland. Thanks to the Labourers' Acts, the housing of the rural population in this country has vastly improved of late years, yet for this and future improvement the community must rely exclusively upon State-aided finance. Building in the way of improving the dwellings of labourers on an estate has in Ireland become practically impossible owing to the increased cost of labour and materials and other causes. In many of the "semi-rural" districts—districts that the common expression of "suburban" does not properly convey the description of—the state of the dwellings of the poor is appalling. Some time since we made a personal inspection of the village of Dundrum, distant not four miles from the City of Dublin, and the state of things to be seen was incredible—almost as bad as the most congested tenement district of the city—families of ten and twelve living in one room, in and around a village, which as far as nature could endow it, was blessed with all the healthful surroundings that pure mountain air and open meadows could give to it. The village is within the Rural District of Rathdown, and on the true state of affairs becoming known to the Council Dundrum village was included in the next labourer's scheme, and eleven two-roomed cottages petitioned for—not a very extravagant demand considering the appalling conditions under which the poor were living, in what despite its proximity to the city is still a country village. What was the result? A Local Government Board inquiry was duly held, and the entire scheme—as far as concerned this particular village—thrown out on the ground that the individual applicants had failed to establish their *bona-fides* as agriculturists. At present the council are seeking urban powers, and here *Country Life* calls attention to a fresh danger which would stifle all private enterprise in building for the working classes, and throw upon the Council the onus of "living up to" their Model Bye-law's standard, and of administering it stringently as towards private enterprise. Says the writer in our contemporary:—"The Model Bye-laws, then, are drawn up and issued by the Local Government Board under the Public Health Act of 1875. Borough and district councils draw up bye-laws of their own, usually copied from these, with such modifications as are deemed necessary, which must be ratified by the Local Government Board before they become valid. But modifications are not very readily accepted. We meet with a grievance at the very outset. The rural district councils are not obliged to adopt the bye-laws, but they may do so; that is to say, when the Rural District Councils see that one part of their district is developing into anything like a town they can apply at once for power to make the same bye-laws as if they were an urban district or borough, and can adopt the whole of the bye-laws. But when adopted they apply not to the urban part only, but to the whole of the district—unless indeed it be resolved to confine them to a 'contributory place,' which is not often done—though the greater part of it may consist of agricultural land." And again:—

"One other point has to be made before we leave this branch of the subject. The bye-laws now being generally adopted by urban and district councils all over the country are those under consideration, but they vary in several particulars from the Model Bye-laws, and even from one another, so that, apart from their stringency and inapplicability, the want of uniformity in districts closely adjacent adds to the inconvenience and irritation of both building proprietors and architects. The petty and unnecessary restrictions generate discontent that should not be. The remedy would be to divest the Local Government Board of its red tape, and have each case of house-building dealt with on its merits. No reason lies in the nature of things for treating a wayside cottage as if it were a workman's dwelling in town, even though in the same district there is a part becoming urban."

CORRESPONDENCE.

TO THE EDITOR OF THE IRISH BUILDER.

DEAR SIR,—In your issue of 10th ult we notice on page 8, under "Contracts," that particulars of the Convent of St. Louis, Louisville, Monaghan, can be had from Slevin and Clayton. We beg to inform you that the partnership hitherto existing between these gentlemen has been dissolved since the 1st day of August, 1900. The firm is now Slevin and Son, not "Sons," as you have opposite R. C. Church, Mohill, County Leitrim. We might also mention to you, with regard to the "Big Educational Scheme," noted on page 597 of same issue, that we are the surveyors.—We are, dear sir, yours faithfully,

SLEVIN & SON.

THE BELFAST COMPETITION.
TO THE EDITOR OF THE IRISH BUILDER.

SIR,—If your Belfast correspondent possesses courage, I can only say that he tempers it with a wise discretion. Referring in your last issue to the now notorious Belfast Competition, he seemed on the point of voicing the universal opinion of both the architectural profession and the general public here on this matter. But evidently a tremor of fear took him, and he dropped the subject like the proverbial hot brick. May I take up his duty? I hold no brief for the much backlogged Committee of the General Assembly, who had charge of the competition, and was neither an entrant nor connected with anyone who was.

Briefly, then, the blame has not yet been saddled on the right horse—if Sir Thomas Drew will pardon the equine appellation. (I am tempted to be alliterative, but refrain). When the Presbyterian Committee selected Sir Thomas as Assessor, they presumably put the previously drafted conditions of the competition in his hands. These conditions were—after the competition was over and the row had begun—characterised by him as "impossible;" and the question naturally arises why this "impossibility" did not strike him beforehand?—and why, if it did (and it must have), he consented, under the circumstances, to act? This is the question at least which the Presbyterian Committee are now asking, and it seems to me that in doing so they have "got the bulge" well on Sir Thomas—if slang is allowable. And the Committee add, to complainants, "Well, if the conditions set by us were so vile, how did the most eminent member of your profession in Ireland and the President of your Institute come to give them his countenance. In a matter so outside our province, we naturally put ourselves in the hands of professional advisers. Messrs. Young and McKenzie prepared the conditions, and Sir Thomas Drew, by acceptance, approved them. Otherwise, we knew nothing about the matter. So, please, don't blame us!"

This is a very natural retort; and it is more—it is an unanswerable one. If the profession has been betrayed, it can lay to its soul the flattering unctious that the betrayal was the work of its own members. Sir Thomas Drew, of course, may differ from me and prove me wrong. I shall be happy to witness the process. Just by way of bringing his brain into form for this, may I recommend him (as a preliminary exercise) to solve the problem of trisecting an angle by plane geometry?—Yours,

A BELFAST ARCHITECT.

The following letter appears in *Country Life*:—

TREATMENT OF OAK FOR ORNAMENTAL WORK.

SIR,—I venture to think that it would be a great boon to many of us if you could give some really skilled information as to the best way of treating oak for ornamental purposes, for garden seats, seats, and so on, and for the many uses to which oak can be put in and about country houses. I may, perhaps, be allowed to give a little account of my own very small and unaided experiments, but I write in the spirit of an enquirer, not of a teacher by any means, in order to invite the views of others who really have studied the subject. I have found that beeswax has a very good effect on the appearance of the oak for indoor purposes, where the beeswax can be renewed, but I do not find it so good for out of door use. The rain on the newly beeswaxed oak gives it a very good appearance, but when the sun comes on this and dries it up, the last state is worse than the first. Neither do I like beeswax and oil, nor oil alone, for both seem to me to retard the effect of time, which is really the best artist in making the wood have a fine appearance. Varnish is altogether execrable, in my opinion, though useful here and there where the rain lodges and the varnish is not seen, for preserving the wood. But to varnish oak seems to me, in a general way, an abomination. What we all want to get, I presume, is the fine grey appearance of oak that has been exposed for some years to the weather. The black oak, I fancy, is only to be got from the pollarded trees, which are comparatively rare on most properties, and for this I think oil helps to get the effect of age. But I speak rather of the ordinary oak. No doubt the application of ammonia helps the grey tint, and does so without interfering with the eventual effect of age. The best way that I have found of applying the ammonia is to enclose the planks to be treated in a chamber hermetically closed—say a small room with brown paper pasted over all the chinks and outlets and inlets of air—having placed in the chamber, before thus closing it, a vessel containing ammonia. The vessel must, of course, be open to allow the ammoniac fumes to escape into the room. To prevent warping of the plank, I presume that the old-fashioned measure of an inch to a year—i.e., a lin. plank is seasoned after one year's keeping, a 2in. plank after two years—is, roughly speaking, correct, provided, of course, it be kept fairly warm and dry. This is about as far as my own little efforts at learning have taken me. Possibly even this may be of use to some one still more ignorant, but I am sure some of your readers could, and they would, tell us a great deal more.—F. H. A.

—:O:—

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

"ÆSCULAPIUS" is desirous of becoming an architect, and wants to know how he should proceed. (1) What are the usual fees? (2) The term of apprenticeship? (3) Would the standard of education necessary to pass the medical entrance suffice as a general education? In reply we should say—(1) From £120 to £200 in a Dublin Architect's office. (2) Either three or five years. (3) Yes.

J. H. T. asks:—(1) Please say what is the best Directory for Ireland for the land and property owners? (2) Engineers, Architects, and Surveyors, Builders, and Contractors? (3) Municipal and Rural County Authorities. (1) Thom's Directory, price 21s.; Alex. Thom and Co., Middle Abbey-street, Dublin. (2) "Architects' Compendium," price 10s. 6d.; 16 New Bridge-street, London, E.C. (3) Thom's Directory.

B. A.—Under the circumstances we should strongly recommend you to follow your architect's advice, and have proper "quantities" taken out by a surveyor. It is an exploded fallacy which says that quantities increase the cost of work. It may be true of very small and insignificant works. But town builders won't tender without quantities. It's not fair to ask busy men to sit down and prepare a bill on the off-chance of getting the work.

"ULSTER SANITARY ASSOCIATION."—An anonymous letter bearing the Belfast postmark reaches us, and is on the subject of this association. In accordance with our usual practice we have relegated it to the wastepaper basket, our ordinary receptacle for anonymous communications.

CONTRACTS.**URBAN DISTRICT OF RATHMINES & RATHGAR.
HOUSING OF THE WORKING CLASSES.**

NOTICE TO BUILDERS AND CONTRACTORS, TO ROAD AND SEWER CONTRACTORS, AND TO SANITARY PLUMBERS.

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in accordance with plans, specifications, and conditions of contract, prepared by Fredk. J. Hicks, Architect, 28 South Frederick-street, and which may be inspected at his office daily between the hours of 11 and 4 o'clock.

Tenders to be on the prescribed forms, which, together with the bills of quantities, may be obtained at the offices of the Surveyors, Messrs. Beckett and Medcalf, 10 Leinster-street, on and after FRIDAY, FEBRUARY 1st, on payment of a deposit of Two Guineas, which will be returned on receipt of a *bona-fide* Tender, accompanied by bills of quantities priced in ink, and an undertaking that the contractor is willing to enter into a bond for the due performance of the contract.

Any Tender not complying with these conditions will be disqualified and the deposit forfeited.

Sealed Tenders, accompanied by priced Bills of Quantities, addressed to me at my Office as under, are to be delivered not later than 4 o'clock p.m. on THURSDAY, FEBRUARY 21st endorsed, "Tender for Dwellings for the Working Classes," or "Tender for Roads and Sewers," or "Tender for Plumbing," as the case may be.

The accuracy of the quantities is not guaranteed.

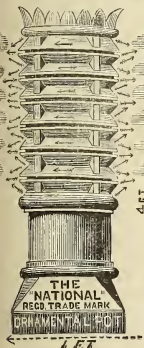
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Clerk to the Council.

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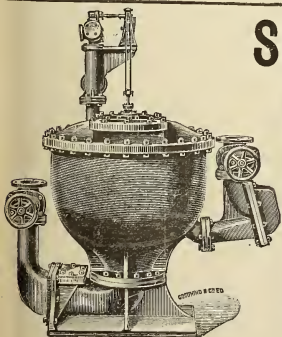
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EXAMINATIONS IN SANITARY KNOWLEDGE.

The Sanitary Institute have arranged to hold Examinations in Practical Sanitary Science, and an Examination for Inspectors of Nuisances at Dublin on June 7th and 8th.

Full Particulars to be obtained at the Offices of the Institute, Margaret-street, London, W.

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TO ARCHITECTS.

Plans are required before 1st March for a new Methodist Church and Lecture Hall at Roscrea. Particulars from W. J. Rudd, Abbey Mills, Roscrea.

SLATES for sale. Large quantity, new, very cheap for cash.—Apply, SHARP & EMERY, 17 Gt. Brunswick Street, Dublin.

ARCHITECTURE.—Draughtsman is willing to Prepare Scale and Detail Drawings for Alterations, &c. Accuracy guaranteed; Specifications and Quantities Terms moderate.—Reply to this Office.

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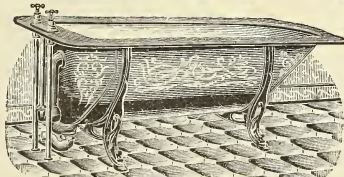
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OUR INTERVIEWS.—No. 2.

MR. THOMAS MANLY DEANE, M.A., R.H.A.

ARCHITECT.

Mr. Thomas Manly Deane, M.A., the surviving partner of the world-renowned firm of Sir Thomas N. Deane and Son, Architects, Dublin, resides and has his offices at 15 Ely Place, a house which he has rebuilt in a decidedly picturesque manner. Mr. Deane willingly assented to our request that he should allow us to publish an interview with him. He modestly suggested that an older man in the profession might follow Sir Thomas Drew, but we felt that Mr. Deane, as the bearer of not only the best known name of latter-day Irish Architects, but also as the representative of a family which has been for 160 or 170 years connected with building, would possess a special and peculiar interest for our readers.

Mr. Deane gave me some of the following particulars relating to his family, and their connection with art:—

Robert O'Callaghan-Newenham, of Cork, his great-grandfather on his father's side (his second daughter, Eliza, having married his grandfather, Sir Thomas Deane), was an amateur artist of great ability, and published his well-known book, "Sketches in Ireland;" he was also a skilful mechanic and an expert turner of ivory on the lathe; several pieces of his work, including a beautiful set of chessmen, still exist. He was born 7th March, 1770, and died after 1832; having married 25th March, 1785, Susanna, daughter of Rev. Deane Hoare, of Limerick—she died 9th January, 1832. He was named after his godfather, Cornelius O'Callaghan, afterwards Baron Lismore—he was 6th son and 13th child of Sir Edward Newenham, of Belcamp, Co. Dublin, M.P., Irish Parliament; by his wife, Grace Anna, daughter of Sir Charles Burton, of Polacton, County Carlow; Sir Edward Newenham was second son of William Newenham, of Coolmore, County Cork, and was born in Cork 13th May, 1732 (see old Bible), he married 2nd February, 1754.

George Newenham, of Summerhill, County Cork, was also an amateur artist, but as far as Mr. Deane knows, was more of a sculptor or modeller than a painter; he was his great-grandfather on his mother's side. His third daughter, Deborah, having married 7th February, 1816, Mr. Deane's grandfather, Joseph Manly, of Ferney, County Cork. He was born 10th September, 1753, being third son, and fifth child of George Newenham, senr., of Summerhill, County Cork, by his wife, Elizabeth, daughter of John Pim, of Cork. George Newenham (referred to as the artist) died 21st October, 1821, having married Sarah, seventh child and fourth daughter of William Meade, of Aldenham, in Hertfordshire, by his wife Elizabeth Weedon; Sarah Meade was baptized 28th October, 1750, and was married about 1778, it is supposed in London. She died 15th March, 1841.

The Deanes, at least this branch of the family, have been connected with either Building, Architecture, or Painting for over 160 years. David Deane, of Cork, builder, his great-grandfather, who was born in Donaghadee, Co. Down, about 1720-30, being the first to follow the art, was second son of Alexander Deane, of Donaghadee (afterwards Tide-waiter at Kinsale, living there in 1758 (see old letter from his son David)—by his wife, Grizzell Kennedy, sister

of Hugh Kennedy, also of Donaghadee (see old family Bible in Mr. Deane's possession). Grizzell Kennedy was probably a daughter of Jas. Kennedy, of Donaghadee, mentioned in the will of David Kennedy, of Ballycultra, County Down, whose will is dated 24th April, 1697, and proved 31st March, 1699. See also the will of Hugh Kennedy, of Ballycultra, "Doctor of Physick" (younger brother of David Kennedy), whose will was proved 31st March, 1699.

David Deane's parents were probably from Ayrshire, as these names occur frequently in that county, and from the fact that he mentions in his will (1795) his cousins in Scotland—John, David, and Anne McCredie, of Gallow Hill, near Girvan, and it is curious to note that Mr. Thomas Tighe McCredie's (solicitor, now living in Dublin) father's name was Robert "Deane" McCredie, son of Rev. Alex. McCredie, and the family came from the County Down, and yet neither family can now trace the evident connection. (See McCredie's notes.) David Deane's eldest brother was named "Kennedy," after his mother, and showing the estimation in which the connection with the great Ayrshire name was held.



MR. THOMAS MANLY DEANE, M.A., R.H.A.
Architect.

From a Painting by

[Fernando Yoxe de T. rry.]

may be seen at Somerset House, and is dated 3rd January, 1795, and was proved 14th April, 1796. (See note *re* John Kennedy Deane, of Yatton, Somerset.)

Hew Primrose Deane, the third son of Alexander and Grizzell, was a well-known painter; this name also shows the Ayrshire connection, as the identical name "Hew Primrose" occurs in the family of Kennedy, of Benane, of that county. He was married 27th December, 1761, in Christ Church, Cork, to Eleanor Gamble, of that city, the witnesses to the marriage being Alexander Deane (probably his father), William Budd and Thomas Deane (but who this Thomas Deane was Mr. Deane has not been able to discover), seems from accounts in various books relating to painters, such as Redgrave's, Bryan's, etc., to have led a remarkable, if not an entirely creditable career; but of his skill as a painter there is no question; he was called the "Irish Claude," and is supposed to have died in 1784 (probably in London).

Hew Primrose Deane had, it is known, at least one child, whose name is not certain, but he was probably identical with "My nephew, Kennedy Deane, of Cork, Painter," mentioned by David Deane in his will 1795. This Kennedy-Deane, "Drawing Master," is also mentioned in the Cork Directory of 1795, and according to the register of St. Peter's Church, Cork, "Harriet, daughter of Kennedy and Charlotte Deane," was baptized 7th July, 1788. This Kennedy Deane could not have been a son of Kennedy Deane, of Gosport, who, as above stated, names no children in his will (1795).

Of Alexander Deane, father of Kennedy, David, and Hew, and of Grizell, their mother, there is very little further record, but he may be identical with the following:—*"Died at Ipswich, in his 100 year, Alexander Deane, Esq." (See Annual Register, March, 1790.)* The date would just correspond; and he may have been moved to Ipswich in a similar capacity to that which he filled at Kinsale; but no reliable record of his death is to be found; it is not recorded in the Kinsale registers, and the earlier St. Paul's (the Cork parish, in which the Deanes lived) registers are lost. H. was present, however, at the marriage of his son, Hew Primrose, in 1761. There is a doubtful entry of burial, *in pencil*, in the St. Paul's register, which seems to read "3rd November, 1762, Alex. Dean;" the date would be quite possible.

David Deane died in 1800, and was buried in St. Paul's, Cork, and February, 1800; his will is dated 25th April, 1795, and was proved 5th February, 1800; his marriage licence is dated 27th May, 1755. He married Mary, daughter of William Kearns, of Cork, who died 1774 (see tombstone, St. Paul's churchyard, Cork), and sister of William Kearns, the Builder and Architect (many of whose works still stand in that city); by her, who died 7th January, 1793, he had two sons, William and Alexander, and one daughter, Agnes, the latter married 14th April, 1785, James Roche, a musician, from whom are descended some of that name still living in Cork (1901).

William Deane, eldest son of David Deane, was a builder and Architect, and married 19th October, 1784, at Christ Church, Cork, Susanna, daughter of Captain William Jervis, said to have been a cousin to the first Lord St. Vincent.

William Deane was a friend of the celebrated Captain Cook, who invited him to sail with him on his last voyage, but, fortunately for him, as he was about to be married at the time, he was unable to accept; Captain Cook, as is well known, being shortly afterwards killed by savages. William Deane was with his uncle, Kennedy Deane, at Portsmouth, when the "Royal George" went down, 29th August, 1782, with "brave Kempenfelt and twice 400 men." He was looking away at the moment, but on turning round he saw the surf left upon the water by the sinking ship. Of his architectural works, Mr. Deane has no knowledge, but he is described both as an Architect and as a Builder in several Cork records. He died in 1814, and was buried at St. Paul's, Cork, 8th January. His will is dated and proved; his wife, Susanna, died in 1835; her will is dated 25th April, 1828. By her he had six sons, viz.—David, an architect; William Henry, a painter; Alexander, a builder; Charles, 5th Fusiliers; Jervis; and Kyrle Allan; and one daughter, Sarah, married to Abraham Hargrave.

William Deane's eldest son, David, the architect, married Catherine, daughter of Arthur Ussher, of Camphire, Esq. He (David) wrote a long letter relating to family history, Sir Thomas Deane, his first cousin, dated 23rd March, 1858, which letter is now in possession of Hermann Deane, son of Sir Thomas by his third wife.

This David Deane had a son, William Henry, late County Surveyor, of Kerry, who died 23rd April, 1887, aged 71, having been born 19th December, 1816, and whose sons, John Deane and David Deane (both engineers in British Columbia), represent the head of this branch of the family as far as we know it.

William Deane's second son, William Henry Deane, was a landscape painter of high merit, and many of his pictures are still in possession of Mrs. Deane, widow of the County Surveyor above-mentioned. He unfortunately "died 13th October, 1808, from injuries received by the falling of a wall while directing a hose at a fire in Collectors' Lane, on the 6th." (See monument in St. Paul's Church, Cork, where he is buried, and where also are buried his grandfather, David, and many more of the family).

Alexander, second son of David Deane and Mary Kearns, was also a builder and architect. He was born about 1760, and was married at Lower Shandon Church by Rev. Henry Campion, 15th August, 1790, to Elizabeth, eldest daughter of Thomas and Elizabeth Sharpe, of Cork. Elizabeth Sharpe's (sen.) maiden name is said to have been Jones, and "she was drowned on her passage from Liverpool to

Cork, on board the brig "Despatch," of Cork, when Captain Jones, the owner, and every other soul on board the said vessel was also lost, November, 1800." (See old family Bible, in possession of A. S. Deane, Esq., of Upper Mount street, Dublin). Her will, dated 28th July, 1800, was proved 3rd December, 1800. Thomas Sharpe's will is dated 20th July, 1789, and was proved 22nd February, 1789 (?). He was buried at St. Paul's, 4th August, 1780.

Alexander Deane died at the early age of 46, 20th March, 1806, "on the way to Balintra, in Middleton, two days after he left Cork, sincerely lamented by all who knew him." (See old Bible last-mentioned). He left five sons and three daughters, who lived, and of whom below; Elizabeth Deane, his wife carried on his business for many years afterwards. In Crofton Croker's "Popular Songs" of Ireland there is a reference in one of them to Mrs. Deane, the mother of Sir Thomas Deane, who was a woman of great energy of character. She took an active part in the superintendence of the naval works which were constructed upon Haulbowline Island, in Cork Harbour, between the years 1816 and 1822, at a cost of £200,000. Her son, Thomas, who was born in 1792, shared for a time the management of the works with his mother. She died 17th March, 1828, leaving considerable property, and mentions in her will, which is dated 10th May, 1827, proved 20th May, 1828, "my tall husband." Their issue were as follows:—

Thomas, born 4th June, 1792, of whom below.

Anne, born 17th March, 1794; died 16th October, 1794.

Mary, born 1st September, 1796; died, 1796.

Alexander Sharpe, born 25th November, 1796; his will 1847. An Architect, in partnership with his brother Thomas.

Mary, born 31st May, 1798.

Anne, born 19th May, 1800.

James Roche, born 31st January, 1802.

Elizabeth, born 3rd April, 1803.

Kearns, born 6th April, 1804; an Architect.

William, born after his father's death.

Kearns Deane (so called after his grandmother), the fourth son, was an artist of very considerable talent, and many of his works, including portraits, remain. An Architect by profession, he was connected with several important works in Cork, and Mr. Deane has a beautifully executed water colour drawing by him of a design for the completion of St. Catherine's R.C. Church in Cork, the spire to which—lately erected there—bears a very strong resemblance to his design.

Sir Thomas Deane, eldest son of Alexander and Elizabeth, was born, as above stated, 4th June, 1792, and succeeded to his father's business when only 14 years of age, but with his mother, who was a woman of great ability, carried it on with considerable success. He was the foremost architect and builder in Cork, for in those days, designing and construction were united. In 1830 he was elected, for the second time, High Sheriff of the City, and was knighted. He married first in 1809, at the age of 17, Catherine, daughter of John Conlan, of Cork, and through her he became possessed of the estate of Umera, in that county; they had two children, Julia, who died unmarried, 10th August, 1863, and John Conlan, born 17th March, 1815—the latter well remembered by many for his fine voice and many talents, and who died 24th February, 1887, at Roslippo, near Naples, leaving many descendants, among others Col. Tom Deane, C.B., who has had a very distinguished military career.

Sir Thomas Deane's first wife, Catherine, died before he was knighted, which event took place when he was Sheriff of Cork for the second time, in 1830, having previously held the post in 1815. The honour was conferred by the Duke of Northumberland, who was Lord Lieutenant of Ireland at the time.

Sir Thos. Deane married secondly 13th Jan., 1827, Eliza, second daughter of Robert O'Callaghan Newenham, above-mentioned, and by her, who died 5th June, 1851, had one son, Thomas Newenham, of whom below; and two daughters, Susanna Adelaide, married to Edward Rogers, Esq., son of Rev. John Rogers, of the Home, Salop; and Olivia Louisa, who is unmarried.

Sir Thomas Deane married thirdly 16th November, 1853, Harriet, daughter of Major John Williams, of Belzoon, Co. Meath, and by her, who survived him, and died 15th November, 1881, had one son, Hermann F. W. Deane, now Head Master of St. George's Choir School, Windsor.

Sir Thomas Deane died 4th October, 1871, at Longford Terrace, Monkstown, County Dublin, and an obituary notice of him will be found in the *Illustrated London News* of 7th October of that year. He built many of the public buildings of Cork, and in partnership with his son, Sir Thomas Newenham Deane, and the late Mr. Benjamin Woodward, who died abroad in 1861, did considerable work for Oxford University, and in London, and Dublin; he was for many years President of the Royal Hibernian Academy and Institute of Architects in Ireland, and the patron of art and artists in more than one respect. (See also Redgrave's "Dictionary of Artists.")

Sir Thomas Newenham Deane was the only son of Sir Thomas Deane by his second wife, Eliza Newenham, he was born June 15th, 1827, and married January 29th, 1850, Henrietta, fourth daughter of Joseph Manly, Esq., of Ferney, County Cork, by his wife, Deborah, third daughter of George Newenham, Esq., of Summerhill, County Cork, Banker, one of the artists mentioned above. Deborah Newenham was born September 7th, 1791, and died at Bray, County Wicklow, October 23rd, 1872, having been married at Upper Shandon Church, Cork, by Rev. Richard Lee, February 7th, 1816. Joseph Manly was born May 2nd, 1780, and died October 15th, 1864.

Thomas Newenham Deane was his father's pupil, and about 1850 entered into partnership with him together with Mr. Benjamin Woodward, a young architect of great talent. The firm then became known as Sir Thomas Deane, Son, and Woodward, and were architects of Cork College. Shortly after this old Sir Thomas Deane dropped out of the work, and the younger partners moved up to Dublin. Then Deane and Woodward were premiated in the great competition for the War Office buildings, and were afterwards successful in winning by competition the Oxford Museum, which gained for the young men the appreciation of Mr. Ruskin. This latter structure led to much work in the University, including the Curator's House, the new buildings at Christ Church facing the meadows, Sir Benjamin Brodie's house, the Union Society's buildings, and afterwards the Clarendon Laboratory. They built in London the Crown Insurance Office in Bridge Street, Blackfriars, and a second building for the same company in Fleet Street. In Dublin they designed the beautiful building at Trinity College, originally intended for a museum, but now used as the Engineering School. About 1858 (Woodward having gone abroad), Mr. Thomas N. Deane designed the Kildare Street Club, and had the honour of conducting the Queen and the Prince Consort over it when they visited Ireland in 1861. From that time he designed a great number of buildings throughout Ireland. Among others may be mentioned Tuam Cathedral, the restoration of St. Canice's Cathedral, Kilkenny, work at Kilkenny Castle for the Marquis of Ormonde, Portumna Castle for the Marquis of Clanricarde, and many other mansions. In Dublin he erected the Munster Bank in Dame Street, the Scottish Widows' and several other insurance offices. He was among those selected to compete for the new Law Courts in London, for which he received, with each of the other competitors, a fee of 800 guineas. Mr. Thos. N. Deane was knighted August 29th, 1890, by the Earl (now Marquis) of Zetland, Lord Lieutenant of Ireland, on the occasion of the opening of the Science and Art Museum and National Library, Dublin, to which great work he and his eldest son, Mr. Thos. Manly Deane, had been architects. Sir Thos. Newenham Deane and his son were also in the limited competitions for the Imperial Institute, in which, with five others, and the completion of the South Kensington Museum, for which, with seven others, they were specially invited to make designs. Sir Thomas Newenham Deane was for many years Curator of the National Monuments of Ireland and Ancient Monuments, under Sir John Lubbock's

Acts. He died, deeply regretted, 8th November, 1899, and is buried at Dean's Grange, Monkstown.

Sir Thomas Newenham Deane did a great work and served his country well, winning respect by his integrity as well as by his cleverness. His loss cannot be replaced for many a year, and his name will ever be revered as the leading Irish architect of the age. He left issue:—

Robert O'Callaghan Newenham, born 10th February, 1853, married 9th June, 1885, Maria Grave, daughter of Joseph Iredale, Esq., of Carlisle, Brewer, and has issue two sons, Gerald Iredale O'Callaghan, born 30th June, 1886, and Thomas Burton, born 25th February, 1893. She died 31st March, 1897.

Joseph Henry, born 29th December, 1856, died 14th September, 1857, buried at Howth Abbey, County Dublin.

Edward Louis Hall, born 31st December, 1858.

George Benjamin, born 14th March, 1862, married 4th July, 1888, Kathleen, daughter of Thomas Tighe Macredy, Esq., and has issue one son, Edward Newenham, born 17th February, 1892, and one daughter, Elsie May.

Henrietta Mary, married 4th August, 1892, Cæsar Litton, eldest surviving son of the Hon. Sir Frederick Falkiner, Recorder of Dublin, and has issue two daughters, Dorothy Cecil and Irene.

Charles Burton, born 21st May, 1866, died 29th August, 1874, buried at Dean's Grange, County Dublin.

William Worth, born 23rd January, 1869, married 19th December, 1896, Edyth A. Dyas, eldest daughter of the late Jacob Dyas, of Heathstown, Co. Meath.

NOTICE.—Following our interview with Mr. T. M. Deane, we shall publish views and description of the MacArthur Hall, Belfast, designed by him. These views, of which proofs reach us at time of going to press, have been specially taken for the *IRISH BUILDER* by Mr. Welsh, of Belfast, and are splendid specimens of the photographer's art.

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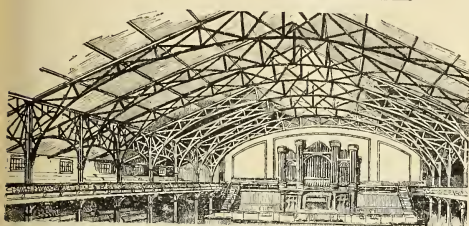
A Belfast Subscriber writes:—"Your last issue was a great improvement on the first."

Castlebar New Church.—Messrs Musgrave and Co., Ltd., have obtained important contract for the heating of this big church.

Sienna Convent, Drogheda.—This building is warmed by means of the "Small Tube" hot water heating apparatus by Messrs. John King, Ltd., Engineers, of Liverpool and Donabate.

Rathdown.—MR. KAY PARRY'S ACCOUNT.—The committee appointed to wait as a deputation on Mr. Kay Parry in reference to his account reported that they had discussed the matter fully with him, and they recommended that he be granted £40 in settlement of the account, and which sum Mr. Parry agreed to accept. Captain Riall said that Mr. Parry felt very much about the way in which he was treated. He said it was not his custom to send a report that he could not substantiate. The Guardians had not acted fairly towards him. Mr. Barrington said he did not agree with the remark that the Guardians had treated Mr. Parry unfairly. The report was adopted, Messrs. Rossiter and Wogan dissenting.

Killiney.—ARTISANS' DWELLINGS.—Councillor Maher moved pursuant to notice, that Mr. Ashworth be instructed to prepare plans for cottages to be erected on the remainder of ground at Ballybrack. He said this question had been referred to the Artisans' Dwellings Committee. There was no doubt but the houses were badly needed. The medical officer said the existing houses were in a very bad state. This scheme of cottages would not cost them so much as the last. They had the ground lying idle, and they might as well use it as not. What they wanted was a cheap house for the labouring classes to let at, say, 2s. 6d. a week.

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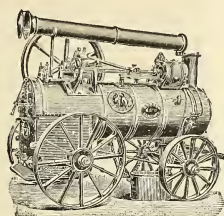
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PRICES FOR PAINTING.

BY A PAINTER AND DECORATOR.)

The following article has been expressly prepared for this paper by an experienced Irish painter and decorator, and will be found of value to our readers. The job for which the prices were compiled is now in progress in the neighbourhood of Dublin, and was for painting only, the total cost being about £4,000. We believe it will be of interest to our readers, as so little attention is usually given to the important subject of painting prices.

PRELIMINARY.

	£	s.	d.
Allow for all scaffolding, tackle, tools, and other appliances for the workmen, together with their carriage and subsequent removal; also for all necessary protection of the work during its progress	10	0	0
Allow for insuring each separate building (where internal work is to be done) against fire, in an approved office, in such amount, not exceeding £500 on each building, as may be considered necessary by the architect...	15	0	0
Remove rubbish accumulated during progress of works, including washing and cleaning floors, windows, fittings, furniture, etc., and leaving all fit for occupation.	25	0	0
Allow for making good all damage by fire, weather, or tempest, and delivering up buildings in a complete state, including the replacing of broken glass, etc.	5	0	0

TWO COATS, SILICATE OXIDE OF IRON PAINT.

	per	yd.	super.
	£	s.	d.
Plain painting on ironwork and woodwork	0	0	4¼
Plain cornices, fascias, soffits, columns, etc.	0	0	6
Open iron railings, wooden fencing, or gates, including braces, stays, etc., measured on one side only, but painted on all parts seen	0	0	6
Painting perforated steps to iron staircases, landings, and other ornamental iron plates (both sides, including the sides or depths of perforations), measured on one face only	0	0	6
Skylights, one side	0	0	6
Window guards and other wire work, both sides, but measured on one side only.	0	0	6
Ditto. taken down and refixed	0	1	0
One coat of Mordant, to make paint adhere to zinc surfaces	0	0	3
	per	yd.	run
	£	s.	d.
Bars, small pipes, mouldings, fillets, straps, etc., under 4in. girth	0	0	1
Bars, pipes, fillets, straps, tee and angle iron, pipe casings, band rails, skirting, reveals of doors and windows, etc., 4 to 9in. girth	0	0	2
Ditto. 9 to 14in. girth	0	0	3
Eaves-gutters, inside and out, two feet total girth and under, including brackets, etc.	0	0	2
Ditto. Ditto. 2 to 4ft. girth.	0	0	3
Rainwater, soil, ventilating pipes, etc., including shoes and fastenings	0	0	1
Ditto., 20in. girth. ditto.	0	0	2
Stove pipes, 6in. diameter.	0	0	2
Coating external surface of ventilating pipes with Dr. Angus Smith's patent knotting	0	1	0
	£	s.	d.
Brackets, or cantilevers, 8 to 18in. projection	0	0	2
Ditto. over 18in. projection	0	0	3
Bails, including chains.	0	0	1
Balusters or small ewels	0	0	1
Boyle's ventilators on roof	0	1	0
Coal plates, one side	0	0	2
Feed cisterns	0	0	6
Heel posts, including brackets	0	0	2
Hopper heads, inside and outside	0	0	2
Hinges, hook and ride, swing bars, large bolts on plates, door springs, etc.	0	0	1

Hooks, pins, staples, knobs, holdfasts, small hinges, latches, bolts, under 9in. long, pins, rings, knockers, buttons, fasteners, etc.	0	0	1
Iron ashbins outside	0	0	10
Iron gratings to gullies	0	0	2
Iron heads and shoes for roof trusses	0	0	2
Iron lavatory basins	0	0	2
Jennings' iron urinals, including basin, foot plate, etc.	0	0	2
Lamp iron or lamps	0	0	4
Lamp-posts, columns, gate-posts, drying posts, etc.	0	0	6
Locks, including staples, bolts, over 9in. long, casement fasteners, etc.	0	0	2
Latrines, all wood and ironwork, per compartment	0	1	6
Mangers and hay racks combined, including bearers, etc.	0	1	6
Manhole covers, both sides	0	0	6
Plates and nuts under 1ft. sup., gully gratings, ditto., stop cock boxes, soot doors, etc.	0	0	1
Ditto. ditto. 1 to 2ft. sup.	0	0	1
Ditto. ditto. 2 to 3ft. sup.	0	0	1
Ditto. ditto. 3 to 6ft. sup.	0	0	2
Pulley wheels and frames	0	0	2
Pump, including handle	0	1	0
Rafter feet	0	0	2
Scrapers, door, and gate stops	0	0	1
Saddle bearers	0	0	2
Shutter, or similar bars	0	0	2
Soot doors and frames, dampers and frames, covers to stop cocks, etc.	0	0	2
Stand pipes, finials, etc.	0	0	2
Trough standards	0	0	2
Ventilators, including frames and covers to air flues	0	0	2
Ventilating gratings or ventilator frames, one side, large washers, caps to stove pipes	0	0	2
Weighing machine	0	1	0
Heads and nuts of bolts, small washers	0	0	6
Iron sash squares (any size), including frames	0	1	0

TWO COATS, LEAD COLOURS.

	per	yd.	super.
	£	s.	d.
Plain painting on woodwork	0	0	4½
Plain cornices, fascias, soffits, columns	0	0	6
Plain painting on plastered walls and dado	0	0	4½
Open gates, railings, palisading, fencing, etc., including braces, stays, etc. (measured on one side only, but painted on all parts seen)	0	0	6
Skylights (out to out of frame), one side	0	0	6
Wirework, etc., including taking down and re-fixing	0	0	4
Window guards and perforated zinc, both sides, including taking down and re-fixing (measured on one side only)	0	1	0
Brunswick black, 2 coats	0	0	4
	per	yd.	run
	£	s.	d.
Bars, small pipes, beads, mouldings, fillets, pipe casings, straps, etc., under 4in. girth, cutting in lines to colours	0	0	0½
Bars, pipes, fillets, mouldings, reveals, surbase, straps, tee and angle iron, pipe casings, hand rails, skirtings, reveals of doors and windows, rails, etc., 4 to 9in. girth	0	0	1
Ditto. ditto. 9 to 14in. girth	0	0	1½
Cleaning out gutters, and staunching joints with red or white lead	0	0	2
Fascia, under 9in. girth	0	0	2
Ditto., and large board, 9 to 14in. girth	0	0	3
Flue pipes	0	0	3
Brunswick black, 2 coats, stove pipes,	0	0	4
Angle cupboard, 2ft. by 2ft. by 6ft. high	0	2	6
Balusters, or small reveals	0	0	1
Brackets, small, under 8in. projection	0	0	1½
Brackets or cantilevers, 8 to 18in. projection	0	0	2
Ditto. ditto. over 18in. projection	0	0	3
Boyle's ventilators on roof	0	1	0

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APPOINTMENT.

Appointment.	Salary.	Particulars from	Last date.
Assistant Secretary and Technical Organiser, Meath County Council ...	Not stated.	Mr. H. J. Cullen, Secretary, County Council Office, Navan.	25th February.

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
Rathmines Artisans' Dwellings ...	Rathmines U.D.C.	Mr. F. G. Hicks, Architect, 28 St. Frederick-street	21st Feb.
Waterford Convent ...	Superiress	Mr. W. H. Byrne, Architect, Suffolk-street, Dublin	No date
Alterations SS. Michael and John's Church, Dublin	Rev. Canon Gorman	Mr. G. L. O'Connor	No date
Dunmanway (Co. Cork), Bank ...	Munster and Leinster Bank, Ltd.	Mr. Arthur Hill, M.A.B.E., Architect, Cork	No date
Castlebar (Two Side Altars) ...	Rev. P. Lyons, Castlebar	Mr. W. G. Doolin, M.A., Architect, Dawson Chambers, Dublin	No date
Curate's Residence, Balheary, Co. Dublin	Very Rev. Wm. Hanley, Admr.	Mr. Geo. L. O'Connor C.E., Architect, Dublin	No date
General Offices and Stores, Limerick	The Irish Co-Operative Agency Socy. Ltd	Mr. Bryan, E. F. Sheehy, C.E., Architect, Limerick	15th Feb.
Diocecan College, Killala ...	Most Rev. Dr. Conmy, Bishop of Killala	Mr. W. H. Byrne, Architect, 20 Suffolk-street	1st March
Hot water apparatus and cooking range, Ballinasloe	Ballinasloe Board of Guardians	Mr. R. J. Gil, Clerk of the Union	16th Feb.
Seating, etc., Donaghedy Presbyterian Church	Church Committee	Mr. M. A. Robinson, Architect, Richmond-st., Derry	21st Feb.
Premises, Railway-street, Armagh ...		Mr. H. C. Parkinson, 11 College-street, Armagh	22nd Feb.

TENDERS.

SHILLELAGH.—For erection of labourers' dwellings, with out-offices, fences, &c., for the Shillelagh Rural District Council. Accepted tenders—P. Neill, Knockreen, Tallow (3 cottages), £400; S. Brennan, Newtownbarry, Co. Wicklow (2), £250; D. Brennan, Carnew, Co. Wicklow (3), £420; J. Doyle, Askeageagh, Ballinglen (2) £460; E. Baugher, Tinahely, Co. Wicklow (2), £273; R. Carey, Coolroe, Tinahely (1), £110; E. Bowes, Shillelagh, Co. Wicklow (1), £125; D. O'Brien, Curravannah, Tinahely (2), £264 10s.

DUBLIN.—For heating appliances—viz., boiler piping and fittings—for the Guardians of South Dublin Union:—Gleeson and O'Dea, 21 Christchurch-place, £89 5s (accepted).

BREVITIES.

The New Workhouse, Llwynypia, is being ventilated by means of Shorland's patent Exhaust Roof Ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Panelling, Doors, Flooring, and Parquetry, including tiling to 14 bath rooms, for a large house at Matlock Bridge, for J. R. Lawton, Esq., designed by Messrs. Stott and Sons, Architects and Engineers, 5, Cross street, Manchester, has been let to Messrs. Goodall, Lamb, and Heighway, Ltd., Lower Broughton, Manchester.

The Staircase and Interior Joiner's Work for a house at Grimsby for G. W. Goddard, Esq., designed by Geo. W. Davis, Esq., Architect, Great Grimsby, has been let to Messrs. Goodall, Lamb, and Heighway, Ltd., Lower Broughton, Manchester, for £633, the flooring and parquetry extra, as per schedule. The fittings and interior joiners' work for the Stockport Bank, to the designs of Messrs. Booth and Chadwick, Manchester, has been let to Messrs. Goodall, Lamb, and Heighway, Lower Broughton, Manchester.

The Carrara Marble Trade is just now flourishing exceedingly. The quarries are producing probably larger quantities than ever, but the demand for marble is rapidly increasing, and some of the largest producers have orders in hand for all that they can supply during the next six months. The saw-mills and depots, where are usually to be seen hundreds and thousands of slabs and tables awaiting buyers, are now practically bare of stock.

The West of England and the Emerald Isle.—Messrs. Vale Bros., of Weston-super-Mare, shop-fitting specialists, have recently completed no less than eleven contracts for the following Irish towns:—Five at Newry; two, Londonderry; one, Wicklow; two, Bray; and one at Greystones. The same firm are also expecting important commissions for Ceylon and the North of Scotland.

Alterations and Additions to Cologne Cathedral, at a cost of £1,100,000 have been made during the past seventy-five years. When the work began in 1824 portions only of the choir and the basements of the two gigantic towers were finished. Since then three master-builders have devoted their lives to the completion of the great "drama in stone," as the old Kaiser called it. Under Herr Ahlert, the first of these, nearly £30,000 was spent in eighteen years. The next master-builder, Herr Zwirner, repaired and raised the outside walls, finished the portals, and improved the iron construction in the roof at a cost of nearly £330,000. The final period, under Herr Voigtel, began in 1862. In the thirty-seven years which have since elapsed, £740,000 have been spent.

Foundations.—When the ground is soft it will require piling or timbering, and to spread it out over a considerable surface the weight in tons divided by bearing power of soil gives surface required. Wind pressure is also an important factor in getting the area of the base. We will not go into the rules affecting wind pressure, but experience has shown that at the base of shaft proper its diameter shall be one-tenth of height for square chimney, one-eleventh for octagon, and one-twelfth for round. In considering wind pressure it is usually figured at from 25 lb. to 56 lb. by different authorities. This must be resisted by foundation, as you can see that if the chimney rocks over with wind it will throw its entire weight on one side of foundation. In considering wind pressure it is necessary to take into account whether chimney is protected by buildings or standing in an open field. If the chimney is built into a building, windage may be almost disregarded except for piece above the roof.

Another Big Contract.—Messrs. Wm. Black & Son, joiners, Clerk-street, who the other week completed their contract with the War Office for huts for the troops in South Africa, have, it is satisfactory to report, been the successful tenderers for the carpenter and joiner work of the large mansion-house to be erected for Mr. C. Fitzroy Fletcher, of Letham Grange and Fern, on his recently acquired estate of Ard-mulehan, Navan, Co. Meath. The house is being built from designs prepared by Sir Sidney Mitchell, C.E., and will be one of the largest in that part of Ireland. The whole of the material will be dressed and made ready for fitting up in the Messrs. Black's extensive works here, and will thereafter be shipped from Montrose and Arbroath to Drogheda, from whence it will be conveyed by canal to Navan. As already reported, Messrs. J. Ford & Son, Montrose, are the contractors for the mason work of the same mansion-house. The Messrs. Black are to make a commencement with their contract at once.

Mr. John Aird, M.P. who receives the honour of a baronetcy in the New Year's List, has represented Paddington in the House of Commons since 1887. He is a well-known figure in London, both in and outside his own constituency, and is the first Mayor of Marylebone under the London Government Act. Sir John, of the flowing beard and genial grace, is the head of the great firm of contractors founded by his father, which undertook the Berlin water service and South London drainage, and, latest of all, the contract for the large Nile reservoir at Assouan, a gigantic work for the irrigation of the Nile Valley. Although not a trained engineer himself, he is an astute business man, and, it is said, has often put his own engineers right on technical matters. It is an honour to those engaged in the building and contracting trades that one of their most prominent and most useful and industrious men should have been remembered and recognised.

THE IRISH BUILDER.

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, & SANITATION,

ARTS AND HANDICRAFTS.

Every Second Wednesday.

[Established Jan 1859.]

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HEAD OFFICE:

FEBRUARY 27 1901.

11 LOWER SACKVILLE ST.,
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

The whole of the lead lights for the large new Church of the Passionists at Ardoyne, Belfast, have been executed by Messrs. Ward and Partners, of Belfast.

Mr. H. A. Luke, of Newbridge, has just won an architectural competition for a new pavilion at Fleetwood, Lancashire.

There appears to be a consensus of opinion that the ugliest building in Dublin is not a hundred miles from Grattan Bridge.

Mr. William H. Byrne, Architect, of Suffolk street, has several large jobs in hands at present. A large work at Balina is projected. Mr. Andrew Bruntz is the surveyor.

The Isolation Hospital, Barnoldswick, is being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Messrs. Kaye, Parry, and Ross, Civil Engineers, have been appointed Consulting Engineers for the Armagh Main Drainage Works, which are being carried out from the plans and specifications prepared by Mr. J. Finlay Peddie, C.E., of Belfast.

The Labour Department of the Board of Trade reports that the number of unemployed in the United Kingdom is increasing. This is very regrettable at the present time, when prices are so high and taxation is heavy, but a period of depression naturally follows a cycle of prosperity in almost every department of trade.

The gross value of the estate of the late Lord Armstrong has been sworn at £1,399,000. There are various local charitable legacies of between £6,000 and £7,000, and an annuity of £2,000 to his lordship's nephew, Mr. John William Watson, and various minor annuities and legacies. Subject thereto the testator's real and personal estate is given upon trusts in favour of Mr. Watson Armstrong and his family.

Recently published lists of prices charged by prominent portrait painters remind us that if modern artists take the cash, eighteenth century painters often took their time. Augustus Hare says that Lord Mexborough asked Sir Thomas Lawrence again and again to send home the portrait he was doing of Lady Mexborough and her child. "I allow I have been a long time," replied the artist at last, "but if Lady Mexborough will kindly bring the baby and give me another sitting, I really will finish." "Well, Sir Thomas," was the answer, "my wife will be happy to give you another sitting whenever you like, but the baby is in the Guards!"

Mr. G. C. Ashlin, R.H.A., is about to add a new wing to Rockwell College, County Tipperary; he has also made designs for an important extension of the Convent of the Redemptorists at Limerick.

The North British Insurance Company is at last proceeding to demolish Morrison's famous hotel in Dawson street, on the site for their new head offices in Dublin, for which Mr. W. Washington Browne, M.A., is Architect.

The Hibernian Banking Co. are about to build new premises in Kildare, owing to the increasing importance of that town as a military centre. The architect is Mr. Francis Bergin, B.E., Town Surveyor.

The death is announced of Mr. Guy Ferguson, a well-known architect in Londonderry, at a very advanced age. He designed and carried out many local buildings, and was a prominent Freemason and Orangeman.

The "Times" of January 7, 1801, contained the following paragraph:—"One of the first Acts of the Imperial Parliament will be for the prevention of conspiracies among journeymen tradesmen to raise their wages. All benefit clubs and societies are to be immediately prohibited."

A novel strike has occurred in the ship-building yards of Saint Nazaire. The shipwrights and plate makers have left work because they want longer hours. They complain that the time allowed for lunch is excessive, and that when they have finished their coffee and smoke a pipe they have to loiter about for an hour or so. The dispute, unlike most trade struggles, admits of a very easy solution.

The carriage in which His Majesty the King rode to the opening of Parliament the other day is known as "the Dublin Coach." This splendid vehicle, which has not been used since 1861, was designed by Sir William Chambers for George III. in 1762, and is one of the finest specimens of the carriage builder's craft in existence. Its body, profusely ornamented with laurel carvings, represents eight palm trees which support the roof. This is surmounted by figures of three boys, representing England, Scotland, and Ireland, with the sword of state, sceptre, and ensign of knighthood in their hands respectively, and supporting the Imperial Crown upon their shoulders. Four carved lions ornament the corners of the roof. The vehicle weighs nearly four tons, and stands over 12 feet high and 8 feet 4 inches wide. The total cost of the State coach was £7,651. The coach is in splendid preservation, and reflects much credit on those who have had it in charge since it was last used, early in the reign of her late Majesty Queen Victoria, the few occasions on which the Parliament has since been opened by the Sovereign in person being only what is known as "Semi-State." The coach is said to have been manufactured by Messrs Maxwell, Hutson, and Co., of Summerhill, Dublin.

THE
ARCHITECTURALASSOCIATION
OF IRELAND.

ARCHITECTURAL ASSOCIATION OF IRELAND.

The fortunate few who attended the ordinary meeting of the above on Tuesday evening last to listen to Mr. George Coffey's remarks on "Optical refinements in classic and mediæval architecture," were well rewarded. The President (Mr. F. Batchelor) occupied the chair. The subject of the lecture may not, perhaps, sound very attractive, and this may have accounted for the comparatively small attendance of members; but, in Mr. Coffey's hands, with his very complete knowledge and keen enthusiasm for everything connected with art, and particularly the antique, the evening proved most enjoyable, and some quite startling revelations were made known by him, by means of numerous very excellent lantern slides, of the methods the old master architects had of overcoming optical difficulties and the subtle inaccuracies they apparently purposely committed to gain effect, in which, as numerous old buildings show, they were eminently successful. Examples of these optical refinements were shown, from the Parthenon of the Greeks, from Pisa and Sienna Cathedrals, the most beautiful specimens of Italian and Romanesque and 11 Century work, and among many other examples, some arcading from Cormac's Chapel at Cashel, where the same peculiar inaccuracies occur; and Mr. Coffey stated his intention of going down to Cashel with Mr. McCarthy, the City Architect, to unravel more of these refinements.

The lecturer, in the course of his remarks, said that he thought the reason that so many of the modern buildings lack life and interest is because of their deadly accuracy and symmetry, and compared the difference between ancient and modern architecture with that between hand-made and machine-made work—one full of life and vigour, the other dead and monotonous.

Messrs. Sheridan, Allberry, Webb, Hicks, and Bradbury afterwards took part in a mild discussion, and the last-named proposed a vote of thanks to Mr. Coffey.

The Committee trust every member will try and be present at the few remaining meetings of the session—that on March 5th, when Mr. John Good will read a paper on "Some Aspects of the Labour Question" should prove very interesting, and some well-known speakers are expected to take part in the discussion.

PROGRAMME FOR MARCH.

ORDINARY MEETINGS.

Grosvenor Hotel, 7.45 p.m., sharp.

TUESDAY, MARCH 5th, Some Aspects of the Labour Question as applied to the Building Industry.

Mr. JOHN GOOD.

Hon. Sec., Master Builders' Association.

NOMINATION OF OFFICERS.—Proposed Abolition of Form B., and Alteration of Bye-Laws.

TUESDAY, MARCH 19th.

"Architectural Amenities."

Mr. R. C. ORPEN.

CLASS MEETINGS.

22, CLARE-STREET, 8 p.m.

DESIGNING CLUB.

FRIDAY, MARCH 8th.

"A Chancel Screen."

CLASS OF DESIGN.

THURSDAY, MARCH 14th.

"A Gamekeeper's Lodge."

Mr. R. C. ORPEN.

THURSDAY, MARCH 28th.

"Criticism of Drawings."

Mr. R. C. ORPEN.

ARCHITECTURAL HISTORY CLASS.

MONDAY, MARCH 11th.

"Renaissance in England and Ireland."

Mr. F. G. HICKS.

MONDAY, MARCH 26th.

"Modern Architecture."

Mr. F. BATCHELOR.

BUILDING CONSTRUCTION CLASS.

THURSDAY, MARCH 7th.

"Sanitary Plumbing."

Mr. T. BAIRD.

THURSDAY, MARCH 21st.

"Criticism of Drawings."

Mr. T. BAIRD.

F. B. HICKS } Hon. Secs.
E. BRADBURY }

22 Clare Street.

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The Penrhyn Quarries.—There has been but little change in the slate trade during the month. Though the Penrhyn Quarries have now been closed for practically three months, the effect upon trade has not been such as might have been expected. Nearly 3,000 workmen left the district, and many of them gave up quarrying altogether, and one might naturally expect that such a large withdrawal of labour would have materially affected trade, sent prices up with a bound, and brought about a wonderful change. It has not done so, and the reason for it is not far to seek. Many of the Bethesda quarrymen sought and found employment at other quarries, and thus increased their output, whilst on the other hand when the dispute took place the demand for slates was not quite so heavy as it had been. It may, therefore, be inferred that if the Penrhyn Quarries had not been closed hundreds of individual workmen here and there would have had to leave work, or a short-week system would have been resorted to in order to control the output.

Wall Paper.—Much illness may result from the use of putrid size and paste in hanging wall papers. Several cases of illness have been traced to the putrefactive odours arising from such sources. Not uncommonly a new paper is pasted over an old one, and this may be repeated several times. Remembering that the paper itself is almost entirely composed of vegetable substances, and that the paste also is vegetable, it is not strange that intolerable stenches have been produced by the decomposition of some half-dozen layers of paper. Before new papering is put on the walls should be cleared of all vestiges of the old, thoroughly washed down, and subsequently coated with size. The sizing diminishes the absorbing power of the wall, and gives a good surface for applying the paper. Bedroom papers require to be more frequently changed than those of other rooms. Bedrooms in regular use should be repapered at least every two years. It is still better to use distemper for such rooms, as this can be washed off in a few hours with comparatively little expense, and can be made of any tint desired. Rooms in the basement should not be papered, as the walls require frequent washing down and cleaning. Here, also, distemper can be used.

PRICES FOR PAINTING.

In consequence of pressure on our space, we are compelled to hold over to our next issue the concluding portion of our article on this subject.



Ballina.—A big Diocesan College is to be built here. Mr. W. H. Byrne, of Dublin, is the architect.

Ballymahon, Co. Longford.—DISINFECTING WORKHOUSE CHAMBER.—Contracts have been entered into for a disinfecting chamber at Ballymahon workhouse, Reek's system. Messrs. Maguire and Gatchell's tender was accepted for supplying and erecting disinfector at £138 2s., and Mr. Christopher Maye, of Ballymahon, was selected to prepare the chamber at £87. The works to be carried out under the supervision of Mr. T. C. Thompson, Architect to the Board.

Belfast.—THE STRIKE.—There would seem to be ground for the belief that in the course of a week the prolonged strike of Belfast carpenters and joiners will be brought to a termination. A joint deputation of joiners and the Belfast United Trades and Labour Council waited on the Technical Committee of the Corporation last Thursday to urge the desirability of considering preferentially the claims of those builders who are working harmoniously with their employees, and paying the higher rate of 9d. per hour, when the question of accepting tenders for the Technical Institute arises. After the meeting the deputation asked Councillor Robert Anderson, J.P., one of the members of the committee, to convene a meeting of the Belfast Builders' Association and Carpenters' and Joiners' Society, it being arranged that Mr. Anderson and Sir James Musgrave should be present. The conference in question was held recently in the Lord Mayor's parlour, Town Hall. The proceedings were of course conducted in private. Sir J. Musgrave presided. Eventually terms, which had been fully discussed, and were strongly recommended by the Chairman and Mr. Anderson, were offered to the carpenters' representatives, who waived their power of acceptance in order to consult the remaining members of their Council.

The dispute of carpenters and joiners in Belfast has entered on a new phase this month. Up to the end of January the men had been on strike for an advance of wages, the employers seeking to enforce some conditions as to unskilled labour, "ringing and pointing" piles, and non-interference of the union outside a certain radius. On the 1st of February, however, the employers practically reissued their original notice as to the above-mentioned conditions, with the important addition that after that date they would require a halfpenny per hour of a reduction. The way in which the Glasgow attempt to reduce wages has "petered out" will encourage the men to resist the last condition which the Belfast builders are seeking to enforce with even more stubbornness than they have maintained their fight for an advance. The men say that the fact should not be forgotten that the wages of joiners employed in the shipbuilding industry are the same both in Belfast and on the Clyde, and that emphasises the injustice of the Belfast builders in trying to create a difference of twopenny per hour between the Glasgow and Belfast house joiners' wages to the serious disadvantage of local workmen.

INCREASED VALUATION AND REDUCED RATES.—Councillor James Johnston, J.P., presided over the meeting of the Finance Committee of the Council of the County Borough of Belfast held in the Town Hall recently, and there was a full attendance of members, including the Chairmen of the several committees.

The estimates sent up by the different committees were carefully gone into, and in a few instances were reduced by the Financial Committee where they thought such reductions could be made without affecting injuriously the efficiency of the departments concerned.

The estimated expenditure for next year shows an increase of between £18,000 and £20,000, but owing to the estimated increase in the valuation there will be a general reduction in the municipal rates of 5d. in the £ on valuations exceeding £20, and of 4d. on valuations not exceeding £20. In the poor rate there will be a general reduction of 3d. in the £.

TECHNICAL INSTRUCTION IN BELFAST.

This concluding lecture in connection with the pioneer series arranged by the Agricultural and Technical Instruction Department was given in the Grosvenor Hall by Professor Lyon, who chose for his subject "The Machine Trades; what Technical Instruction can do for Them."

Professor Lyon, in the course of his discourse, asked what was technical education? That was a question put to him the other day by a friend in Dublin. Technical education, he would answer, was the principle which underlies practice. Whatever they did with their hands had generally some scientific principle underlying it, and he took it that scientific principles were, roughly speaking, technical education. From what he had seen of Belfast, he thought there might be a great many people who would say, "What do we want with technical education at all?" Is not Belfast one of the most prosperous cities in the British Isles? Have we not got shipyards which had last year the third largest output in the United Kingdom? Have we not got the flax and linen industries and ropeworks? Let well alone. Why should we change it? That was a very natural thing to say, but it was certainly not correct. They should remember that England was twenty years ago in the position that Belfast was in now. England was prosperous, and yet Englishmen seemed to vie with each other why England did not take up technical education. They had it dinned into their ears that America was taking this market and Germany that. England responded to that; it had taken up technical education, and now his opinion was that England stood in the forefront of the nations of the world in technical education. Belfast, the Professor continued, was quite apart from the rest of Ireland; it was prosperous, but the rest of Ireland was just the reverse. They could not judge the country from one town, and his remarks were applied to the country generally. Ireland as a country was not prosperous, and he was glad to see other parts of the country outside Belfast taking up technical education. It would never do to have the rest of the country taking it up and Belfast not because it was prosperous, but there was no fear of that, because the Corporation had taken it up, and people with such energy as there were in Belfast, he had no doubt, would make it a thorough success. (Applause). Technical education had always been progressive; it cultivated the habit of investigation, and in this connection the Professor referred to the discovery of photography by Daguerre, who was not a very clever man, but was imbued with the spirit of research. The Professor, continuing, said he would like to see technical education introduced here, because it touched a great many people in Belfast. Supposing men were engaged in a monotonous occupation tending some machine that did not require brain power. Were they to educate these people? Were they to give them technical education? That was a very difficult problem. The man or woman without a hobby was a miserable being. There were some few—very few, he thought—who made the work by which they earned their bread their hobby. The majority of people did not. They looked upon it as work, and when they had done with it they wanted amusement, which was another name for a hobby. Technical education would give them that hobby, and they would understand what they did not understand before. The want of technical education had at all times occasioned the most tremendous waste of labour in the world. Mr. Horace Plunkett's department had as much to do with technical education as with agriculture. There was an old saying that cream would rise if they set the milk properly, but if they did not set the milk properly it would not rise, and if Mr. Plunkett's department enabled everyone to obtain technical education it would give all talent a chance to come to the top, which it certainly had not now. (Applause). Professor Lyon afterwards exhibited a series of views, in which

he showed the development of machinery from primitive times, and concluded by saying that a Belfast gentleman had said to him that prosperity depended on machinery and not on technical education, but he would point out that machinery depended upon technical knowledge.

Bray.—The Council have decided to seek powers to extend the township boundaries. If successful, this scheme will add £12,000 to the annual rateable value of the town. It is proposed to take in right up to Loughlinstown.—The Florence-road will shortly be opened.—Lord Pembroke is about opening a new road, which the Council have agreed to save and light, and have permitted Lord Pembroke to name it "King Edward's road."

Carlow.—**ALLEGED MALICIOUS INJURY.**—At the Urban District Council, notice was received from Reverend E. A. Brandon, Old Leighlin, stating it was his intention to claim £15 for the malicious destruction of three panes of stained glass and the lead casting thereof in the east window of Leighlin Cathedral.

A SURCHARGE OF £41.—The report of the Auditor, contained in the account of the proceedings of the County Council on the previous day, was read. It contained a surcharge of £41 on Mr. C. F. McNally on account of the building of cottages which were erected by the board's engineer in consequence of the impossibility of getting a contractor.

The Clerk then read the Auditor's report on the matter, and said that his surcharge had reference to the three cottages that the old Board of Guardians put in the hands of their engineer, who was to employ workmen. Mr. Byrne was treated as a contractor, and was paid a percentage of 10 per cent. in addition to the 4 per cent. as an engineer. They had the sanction of the Local Government Board to a resolution, embodying this resolution, but the auditor refused to look at this resolution.

Mr. Engledow said that Mr. Bruen was in the chair when the resolution was adopted.

Carrikmacross.—**A HARDSHIP ON CONTRACTORS.**—The following letter was received:—"We would like to know what we are going to do about the cheque we hold for the last five months, as we cannot get it cashed.—Yours faithfully, MULHOLLAND AND CASEY." Mr. Mulholland was brought before the board, and said the cheque was issued to him in July last. He had made frequent applications to the Bank, and they refused to cash it.

Cavan.—Mr. Drury held a sworn inquiry into a memorial from the ratepayers of the Ballinagh district against the adjutant order of the Local Government Board fixing the district as the area of charge, for £200 due for sanitary work in the village of Ballinagh, which expenditure was at the time fixed on a certain defined area. The inspector produced a Local Government Board order confirmed by Act of Parliament, which gave the Board power to extend the area to the electoral division. He said he would report in favour of the adjustment order.

Dublin.—At a special meeting of the Corporation the Lord Mayor, who presided, said that a letter had been received from the Local Government Board sanctioning the loan of £254,000 which the Corporation had applied for in connection with the electric lighting of the city. Certificates gained by several of the Sanitary Sub-Officers for proficiency in the work of their department at the recent examinations having been distributed, a number of appointments were made in connection with the administration of the affairs of the areas added under the Boundaries Act. Mr. F. J. Allan, Lord Mayor's private secretary, was elected Secretary to the Cleansing and Lighting Committee; Mr. P. Nally was appointed Assistant Secretary of the Public Health Committee; Mr. M. Moynihan C.E., was elected Engineering Assistant, and Mr. Robert Donnelly was elected Building Surveyor. Several other appointments were made.

Kingstown.—Much dissatisfaction exists amongst the town tenants on the subject of the want of fixity of tenure. They object to rebuild on their existing or proposed new short leases, as desired to do by the ground landlords. A public meeting to ventilate these serious grievances will shortly be held.

Kingstown.—Another £50 is to be spent on the Town

Clock at Kingstown, though over £100 was expended on it a few months ago.

Killiney and Ballybrack.—We are glad to observe that the Urban Council still continues to take a deep interest in the housing of the working classes. During the past two years the Council have erected eighteen very fine cottages, which are let at a moderate rent, and are a great boon to the poor people, who had hitherto mostly to reside in miserable huts without any sanitary accommodation whatever. At the Council meeting held on 4th February, a resolution in the name of Councillor Maher to have cottages erected on the remaining portion of building ground at the disposal of the Council, came up for consideration, and, after some friendly discussion, was referred to the Artisans' Dwellings Committee to prepare a scheme for the Council. We believe it is the wish of the Council to have houses built which can be let at a more moderate rent than those already erected.

Limerick.—Large additions to the Redemptorist Monastery, Mount St. Alphonsus, are shortly to be begun. Mr. G. C. Ashlin, of Dublin, is the architect.

Lisbellaw.—The architects for the improvements to the church, which we noted in our last issue, are, we hear, Messrs. A. Scott and Son, of Drogheda.

Rathdown.—**THE CHAPEL AND NUNS' RESIDENCE.**—The Local Government Board wrote in reference to the entry in the minutes of 30th ult., in which it appeared that the Guardians adopted a report of Mr. Comber's relative to the sites for the erection of the Roman Catholic chapel and nuns' residence, and asking to be furnished with the amended plans, estimate, etc. As the proposal of the Guardians at present stood, the Local Government Board were satisfied that they could be approved of.

Rockwell College, Co. Tipperary.—Plans have been prepared by Mr. G. C. Ashlin, R.H.A., Dublin, for considerable additions to this college, and comprising library, cloisters, etc.

Roscrea.—A new Methodist Church, to seat 200, is to be built.

Lurgan.—Mr. Robert Agnew, Local Government Board Inspector, recently resumed the inquiry in the Portadown Town Hall into the correctness of the representations made to the Lurgan Rural District Council.

Omagh.—Mr. George Murnaghan, M.P., presided at a meeting of the Urban District Council. The Local Government Board wrote acknowledging the receipt of the Council's application for a loan of £3,000 to erect labourers' cottages. A communication was received from the Local Government Board requesting to be informed whether the committee appointed to inquire into the water supply of the village of Gortin had furnished their report. The clerk was directed to ask the committee to furnish the report as soon as possible.

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Building under the Public Health Act.—It is a matter of some regret that the official law report should continue to chronicle cases which do not really lay down any principle of law, but are cases depending on the view taken by the Bench of certain facts. Last week the Queen's Bench Division (so called by statute) had to decide whether a weighing-machine shed at Southend-on-Sea was a building within the meaning of Section 157 of the Public Health Act, 1875, which empowers urban authorities to make by-laws "with respect . . . to new buildings . . ." The structure in question appears to have borne a considerable resemblance to a bathing machine, and the justices held that it was not a "building." This decision was appealed against, but was upheld. In the course of the argument several cases were referred to as governing the one under discussion—not cases laying down a principle of law, but resembling the present one in their facts. But a very slight difference may be sufficient to cause a judge to consider one structure to be and another not to be a "building," and one result of reporting and preserving such cases, is to mislead persons. Each of these cases must be considered on its merits; and, as we have said, a slight dissimilarity, such as movability or unmovability, may cause judicial decisions to vary.—*Builder.*



Armagh.—Messrs. Kaye, Parry, and Ross, Civil Engineers, of Dublin and Westminster, have been appointed consulting engineers for the Armagh Main Drainage Works, which are being carried out from the plans and specifications prepared by Mr. J. Finlay Peddie, C.E., of Belfast.

Bray.—A meeting of the District Council will shortly be held for the purpose of considering the tramway scheme. The opening up of the Florence-road is certain.

Carrikmacross.—THE NEW RAILWAY.—The Secretary of the Midland Great Western Railway wrote acknowledging receipt of resolution expressing favour of the proposed opposition to the Great Northern Bill, to abandon the proposed connection with Kingscourt and Carrikmacross, and saying they were determined to forward their scheme.

Kingscourt, Keady, and Armagh Railway.—At a meeting of the Rural District Council the following resolution, proposed by Mr. Phelan, seconded by Mr. Martin, was adopted:—"That we hail with delight the tidings that the Midland Great Western Railway Company are endeavouring to get permission from Parliament to carry into effect the Bill which was passed last year for the construction of a line of railway from Kingscourt to Keady; and we hereby call on the Irish members of Parliament to assist the Midland Company by every means in their power, and to strongly oppose the scheme as proposed by the Great Northern Railway Company.

Kingstown.—£500 more to be spent on "Victoria Beach," or did you say "Somebody's Folly?" Good old Kingstown!

Parsonstown and Portumna Railway.—It is reported that a company in London is about to take up this derelict railway, cross the Shannon, and proceed to Scariff, and steps are now being taken to obtain powers to construct the section between Portumna and Scariff. This will be a most useful line, and will secure a large cattle traffic, and branch off to the West for the tourist. Mr. Thomas S. Irwin, C.E., has been engaged to survey and report on the undertaking.—*King's County Chronicle.*

Portadown.—THE DRAINAGE OF THE BANN.—A meeting of the farmers and others was held last night at Derryall, near Portadown, for the purpose of urging on the Government the necessity of passing a Bill to carry out a scheme for the drainage of the Bann in order to prevent the periodical floods which this year has resulted in enormous destruction to property, and caused a great deal of suffering and misery against the inhabitant of the low-lying districts. Mr. W. C. McCann, D.C., presided, and there was a large representative attendance. Rev. J. Foster Park moved the adoption of resolutions dealing with the object for which the meeting was called. Mr. Thomas Shillington, J.P., seconded the resolutions, which were supported by Mr. Henry Richardson and Mr. John Carter, and unanimously passed. The various speakers referred in strong terms to the apathy of the Government in regard to this long-standing grievance. The following were appointed as a committee to prepare a memorial to the County and District Councils—Messrs. Thomas Shillington, McCann, W. Atkinson, J. Carter, R. Carraher, W. J. Jackson, James Turkington, and H. Richardson.

Stillorgan.—The agents for the Stillorgan Park estate have addressed a letter to the Rathdown Rural District Council, complaining of the want of lighting and sewage.

Waterford.—A number of stations are to be erected along the South Coast of Ireland, to enable communications to be made by the Marconi system of wireless telegraphy with passing Atlantic liners when necessary.

Progress in Electrical Machinery.—There has been great progress in the size of electrical machinery since the dynamo began to be an important factor in industrial affairs. Twelve years ago a machine absorbing 50 horse-power, and able to maintain 500 16 candle-power lamps, was considered very large, and machines of this size were the exception rather than the rule. Now dynamos of 2,000 and 3,000 horse-power are usual sizes, while a number of machines of 5,000 horse-power are working at Niagara Falls, and others of the same capacity are under construction for the Massena, New York, plant. It is difficult to realise the great power of machines of this size. One of them could furnish current for about 7,000 arc lamps, or about 60,000 incandescent lamps, of the usual size. Working as a motor, one of them could pull six locomotives backwards. One of them could furnish current enough for all the telegraph lines of the world and have some to spare. While at present 5,000 horse-power seems to be the limit of size of the dynamo, there is no reason why much larger machines might not be made if they were needed. The present limit is imposed by convenience rather than necessity, as larger units would be somewhat difficult to handle and are rarely needed.

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Sugar in Mortar.—Longman's "Notes," Part III., has the following (1889): "The Use of Sugar in Mortar. It was pointed out many years ago (1837) by Vicat that the bad qualities of rich limes 'may be in some degree corrected by the use of a comparatively small quantity of the coarsest sugar dissolved in water with which they are worked up,' and that sugar was extensively used in the East for common mortars made of calcined shells which, when well prepared, 'resists the action of the weather for centuries.' A recent discussion on the subject has led to experiments being made to ascertain the effect of sugar on portland cement, and it was found that the addition of from one-eighth per cent. to two per cent. of pure sugar to Dyckerhoff's German portland cement increased its strength after three months considerably. The sugar is said to 'retard the setting,' and thus permit the chemical changes in the cement to take place more perfectly. More than two per cent. of sugar made the cement useless." In techno-chemical receipt book by Brannet and Heath, of Philadelphia, and to be had here of Messrs. Sampson Low, Marston, and Co., Fetter-lane, London, E.C., gives thus for waterproof mortar: "The lime is slaked with a solution of green vitriol instead of ordinary water. The necessary quantity of green vitriol is dissolved in warm water, the lime slaked in the usual manner and then mixed with fine quartz sand." No proportions given, but small, no doubt, like the sugar, green vitriol being powerful stuff. Weatherproof cement work. *Ibid.* Soak for twenty-four hours article with solution of ferrous sulphate, one; water, three; and dry in air. The ferric oxide produced is chemically combined in the cement, and makes it denser, harder, heavier, and weatherproof, filling up most of the pores, and giving it an ochre colour. Ornamental cement work is brushed over with the solution four times, and allowed to dry. The cement work can be rendered extremely resisting by warming and then coating with a hot mixture of equal parts of paraffin and paraffin oil. This is recommended for ornamental cement work exposed to the weather. By treating twice with a 5 per cent. soap solution, drying and polishing, the surface is made receptive for oil painting. Chalk objects and room walls treated in this manner will stand any amount of washing. Light ochre colour can be obtained by adding alum to the ferrous sulphate, and various shades of green by painting with chromic alum.

OUR INTERVIEWS.—No. 2.

MR. THOMAS MANLY DEANE, M.A., R.H.A.,

ARCHITECT.

(Continued.)

Sir Thomas Newenham Deane left issue as follows:—

Thomas Manly, born 8th June, 1851, of whom further below.

Robert O'Callaghan Newenham, of Southport, Surveyor, Post Office Service, born 10th February, 1853; married 9th June, 1885; Maria Grave, daughter of Joseph Iredale, Esq., of Carlisle, Brewer, and has issue, Gerald Iredale O'Callaghan, born 30th June, 1886, and Thomas Burton, born 4th May, 1887. She died 31st March, 1897.

Joseph Henry, born 29th December, 1856, died 14th September, 1857. Buried at Howth Abbey, County Dublin.

Edward Louis Hall, educated as an Architect in his father's office, Architectural Inspector, Local Government Board, Ireland, born 31st December, 1858, resides in Dublin.

George Benjamin, of Balla, County Mayo, Land Agent, born 14th March, 1862; married 4th July, 1888, Kathleen, daughter of Thomas Tighe McCreedy, Esq., of Dalkey, County Dublin, son of Robert "Deane" McCreedy before mentioned. They have issue one son, Edward Newenham, born 17th February, 1892, and one daughter, Elsie May.

Henrietta Mary, married 4th August, 1892, Cesar L. Falkiner, eldest surviving son of the Hon. Sir Frederick Falkiner, Recorder of Dublin. They have issue two daughters, Dorothy Cecil and Irene Kathleen.

Charles Burton, born 21st May, 1866, died 29th August, 1874; buried at Dean's Grange, County Dublin.

William Worth, of Southport, Land Agent, born 23rd January, 1869; married 19th December, 1896, Mary Edyth Anne, eldest daughter of the late Jacob Dyas, Esq., of Heathstown, County Meath.

Thomas Manly Deane, Architect, the subject of our interview, is the eldest son of the late Sir Thomas Newenham Deane. He resides at 15, Ely Place, Dublin, and was born 8th June, 1851, and married St. Patrick's Day, 1888, Florence Mary, only daughter of James F. Wright, Esq., M.A., of Dublin, and his wife, Marianne Bunting, daughter of Edward Bunting, the celebrated Musician and Collector of Ancient Irish Music, and to whom Moore was indebted for the music of many of his Irish Melodies. Mrs. Deane's parents were married 11th December, 1860, and her mother died 21st January, 1883.

Mr. Deane has two children, Mary Primrose and Thomas Alexander David, the latter born 25th February, 1893; and he hopes that one or both may keep up the artistic record of the family.

Mr. Deane graduated at Trinity College, Dublin, in 1872, and while in college studied Architecture as his father's pupil. On receiving his degree, he was apprenticed in London to the late William Burgess, A.R.A., to whom, he says, he owes more than he can express for having put him on the right road to the knowledge of his Profession and its allied Arts. After leaving Burgess, Mr. Deane studied from life in the studio of Mr. Frederick Weekes, and at the Slade School, and made further Architectural studies in a six months' tour through France, returning home at the end of 1875. After working a year in his father's office, Mr. Deane competed for, and gained, the Travelling Studentship in Architecture at the Royal Academy, and again went abroad, and visited Italy, where he remained for nearly a year and a half.

Mr. Deane on his return from Italy in 1878 became his fa-

ther's partner, and with him was Architect to the Science and Art Museum and National Library of Ireland and, took part in the limited competitions for the Imperial Institute and for the completion of South Kensington Museum. Mr. Deane and his father had also the honour of being invited in to submit drawings and photographs of their principal works, and their names were amongst those sent forward to her late Majesty's Office of Works for the purpose of selecting Architects to the new War Office and other buildings at Whitehall. Mr. Deane and his father carried out several other public buildings and important works, including the Market House and Town Hall and Fountain at Bray, County Wicklow, for Lord Brabazon (now Lord Meath) in 1882; and the Physiological Laboratory and Anthropological Museum for the University of Oxford (1883 to 1885), the Lecture Theatre for the Royal Dublin Society, and the Offices of the Natural History Museum, Dublin, both for the Board of Public Works; and shortly before Sir Thomas N. Deane's death completed the plans and arranged the contract for the additions to the National Gallery of Ireland, also for the Board of Works. And it is hoped that the completion of the Museum and National Library will shortly be proceeded with from their designs.

The McArthur Hall, Belfast, which we illustrate in our present issue, was gained in competition in 1887, and erected from this firm's design. Mr. Deane's designs were premiated in the competitions in 1891 for the rebuilding of Cork Courthouse; and in 1892 for the Glasgow Fine Art Galleries in Kelvingrove Park in February, 1893. He and his father gained in competition and carried out the buildings of the National Hospital for Consumption for Ireland, for which Hospital Mr. Deane expects to be shortly engaged in making plans for further extensive additions.

Mr. Deane designed the Mural Decoration and elaborate Mosaic pavements, which have been carried out at St. Bartholomew's Church, Dublin, for the Rev. Canon Smith, and, as well as the drawings to a large scale of all the Figure Work and Ornament, painted himself the Cherubim in the roof of the Sacrament.

Mr. Deane is at present engaged on extensive works at Sligo Lunatic Asylum, including a handsome New Chapel to accommodate 400 persons, and has completed plans for two New Blocks to hold 300 additional Patients; also on the additions to the National Gallery above referred to; and in Remodelling the buildings of the Church of Ireland Training College in Kildare street, and in the erection of the Kildare Place Front to that College as a Memorial to the late Lord Plunket, Archbishop of Dublin.

The Irish Pavilion at the Glasgow International Exhibition, 1901, for the Department of Agriculture and Technical Instruction for Ireland is now in course of erection from Mr. Deane's design. And "as Architect to the Surrounding Buildings," he has been put upon the Executive Committee of the Queen Victoria Statue Fund and National Memorial to her late Majesty, which it is hoped will be erected shortly in the Courtyard of Leinster House.

We illustrate in this present number the McArthur Hall, Belfast, built from Mr. Deane's design.

OUR ILLUSTRATIONS.

THE MCARTHUR HALL, BELFAST.

The McArthur Hall was opened for the use of the lady students of the Methodist College, Belfast, on 26th August, 1891, having been built by the late Sir William McArthur, formerly Lord Mayor of London, who liberally furnished all the funds needed.

The total cost of the work amounted to £14,451 4s. 9d.

The contractor was Mr. Robert Corry, of Belfast, and the work was gained in open competition and carried out by the firm of Sir Thomas N. Deane and Son, Architects.

The views, which we reproduce, are from photographs specially taken for the IRISH BUILDER by Mr. Welsh, photographer, Belfast.



THE McARTHUR HALL, BELFAST.
SIR THOMAS N. DEANE & SON, Architect.

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



THE MACARTHUR HALL, BELFAST.

The Main Entrance.

SIR THOMAS N. DEANE & SON, Architect.

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ASYLUMS AND ASYLUM PLANNING.

A meeting of the Royal Institute of British Architects was held at the rooms in Conduit-street, when Mr. E. A. Gruning, vice-president, occupied the chair. After an address by the president to the members in relation to the death of the Queen, and one presented by the Council to his Majesty the King on behalf of the Institute had been read by the secretary, it was announced that in the ordinary course of events on the evening in question the name of the Royal Gold Medallist would have been announced; but this medal was a personal gift of the late Queen, and it was at this time not deemed expedient to approach the King on the subject. The Council intend, however, to make application shortly to his Majesty in reference to the matter.

A paper on "Asylums and Asylum Planning," by Mr. George T. Hine, F.R.I.B.A., was then read by Dr. Hayes Newington.

Mr. Hine said that asylum construction embraced the study of almost every description of building, from a church to a cowshed, and the art of combining so many dissimilar structures into one harmonious whole, with the engineering skill necessary to provide for and supply heat, light, and water to what is practically a little town, made asylum architecture an almost distinct profession in itself. After giving an historical sketch of the progress and development in the building of public asylums, referring to many epoch-marking buildings, the author described some of the most notable erections since the Act of 1845 (which made it compulsory on local authorities to provide asylums for the insane in the boroughs and counties of England and Wales), indicating the various stages in the evolution of asylum planning, a study of which is essential to a proper appreciation of its latest developments. Existing types of plan are all more or less developments of the corridor and pavilion systems. In the early days the corridor system, consisting of a long gallery, with single rooms opening out on it, was the only recognised principle on which an asylum could be built. The form was usually quadrilateral. After the Act of 1845, while the internal arrangements savoured less of restraint, the principle of the corridor system still prevailed. The first development was an attempt at classification by the introduction of a ward for the sick and infirm on each side of the building; the number of cells was reduced and more patients were allowed to sleep in associated dormitories. In the seventies special provision began to be made for epileptics, and the Lunacy Commissioners in 1874 published a plan designed by Mr. Howell for an epileptic ward, which has been adopted with trifling variations in nearly every asylum designed within the last twenty years. In the decade 1871-80 the most notable departure in planning is met with in the Lancashire County Asylum, at Whittingham, designed in what Purdett describes as the corridor-pavilion style, and characterised as one of the finest specimens of asylum architecture in England. The Gloucestershire second county asylum, erected on the pavilion system, the blocks being arranged in echelon, was the first of this type erected in England, and may be said to have originated the oblique or broad arrow form of corridor now so commonly adopted in asylum designs. The Surrey second county asylum at Cane Hill, one of Mr. Howell's chief works, and accommodating 2,000 patients, is on the pavilion type, the blocks radiating from a main corridor of horse-shoe form. Criticising the variation of floor levels in this building, which necessitated flights of steps in the corridor, the author was of opinion that this irregularity could have been avoided by a more careful consideration of the surface levels of the ground and a little more excavating. He urged architects designing asylums to give a first consideration to the site. In many of the plans coming under his official notice the buildings were generally left to adapt themselves to the site rather than the site being adapted to the buildings. Describing the Claybury Asylum, designed by himself, the problem to be solved was how to accommodate 2,000 patients within reasonable distance of the administrative centre without prejudice to the position and aspect of their wards. The plan he adopted was a modification of the echelon type, the wards being approached from obtusely oblique corridors, the pavilion system being almost a necessity from the conditions issued. The asylum is built on the top of a hill, falling all ways, and by removing the apex of the mound,

representing nearly 100,000 yds. of soil (which was well disposed of in filling up a valley to the north of the asylum), a level plateau was obtained, sufficient to allow of about half the patients' blocks and the whole of the administrative department being erected at one uniform level, the remaining wards being slightly lower, but in no case more than 5ft. below the central buildings. At Bexley Asylum the author first introduced the villa system on a tentative scale of three villas holding 35 patients each, and a detached hospital for 50 phthisical cases or others requiring isolated treatment. In this asylum, which accommodates 2,000 patients, all the wards communicate with one another, and an officer may pass from one end of the male or female side to the other without retracing his footsteps or being obliged to return to the main corridor. Bexley has proved so satisfactory that the London Asylums Committee have arranged with Mr. Hine to use the same plans, with a few modifications and improvements, for a second edition of this asylum at Horton.

Numerous other asylums were referred to, the author indicating their distinctive features and in many cases exhibiting plans.

The London Asylums Committee have found it necessary to add temporary buildings to some of their asylums. These erections, chiefly of wood and iron, provide accommodation for 1,700 patients at a total cost of about £173,000, averaging £100 a bed—a costly expedient, considering the limited life of these structures.

In 1889 the London County Council appointed a committee to enquire into and report upon the advantages of the establishment, as a complement to the existing asylum system, of a hospital with a visiting medical staff for the study and curative treatment of insanity. Their report showed the evidence to be greatly in favour of the scheme, and they summed up strongly recommending the establishment of such a hospital. The County Council, nevertheless, ignored the recommendation, and have continued building asylums on the old lines. Other county authorities, however, have taken up the matter, and are providing hospitals for the reception and treatment of curable cases. The provision of acute hospitals the author considered to be one of the most important evolutions in modern asylum planning.

Dealing with asylums on the Continent various plans were shown of German asylums, and interesting details given of the villa system as seen in the asylum at Alt Scherbitz, which may be said to have originated this type of planning, now adopted more or less in modern American asylums, and more recently, but to a less extent, in England. The villas are constructed very much like boarding-schools, with day and class-rooms on the ground floor and associated dormitories above. The doors and windows are open, and the patients come and go as they please, wander about or work in the grounds, enjoying comparative freedom, but always under the watchful eye of carefully-trained attendants. No wall encloses the estate, only a light and easily climbable fence. The gardens surrounding the houses in the central establishment are closed with palings, grown over with plants and creepers. The colony is bounded on the south by the River Elster, which flows at the foot of a steep hill in the grounds, and there is nothing to prevent a patient rushing down the hill and plunging into the river. Great value is attached to residence in the colony, and patients are given to understand that their stay there depends on their good behaviour, and are thus encouraged to exercise self-control.

Having given an account of asylums as they are, the author went on to deal with future possibilities of asylum designing, and then gave a detailed description of an asylum as it should be, instancing a building to accommodate, say, 800 patients, with provision for future extension to 1,200. As an illustration, the plans were referred to of the new East Sussex Asylum now being erected at Hellingly.

To understand the first principle of asylum construction, it is necessary to know something of the eccentricities of insanity and the habits and treatment of the insane. The author recommended the student in asylum planning to make friends at all opportunities with the medical experts, and to study the subject in the light of those whose duty it is to look after the insane.

In the ideal asylum the most important building must be the

acute hospital. Here it is that every patient, unless hopelessly incurable, is admitted, and during his stay in this hospital his future life is probably determined, whether he shall recover and go back into the world, or whether he shall pass out to the main asylum for the remainder of his days, to eke out an unhappy existence at a cost of more than £30 a year to his country. On every ground we cannot afford to neglect anything—consideration, care, or money necessary to produce a building—which affords the doctors the best opportunities for treating and curing their patients. Any money thus spent will prove the truest economy in the end.

The various parts of his ideal asylum having been discussed in detail, together with the engineering works, internal fittings, laundry, systems of heating and ventilation, &c., the author concluded his paper by a reference to the cost. He was of opinion that a well-built asylum, designed on liberal principles and fitted with all modern appliances, cannot be erected for much less than £300 a bed. Twenty-five years ago Nottingham Borough Asylum cost £170 a bed. But that the increased cost is not out of proportion to that of other building works is shown by the report of the Metropolitan Commissioners, where the cost of fifteen asylums erected before the year 1845 is stated to have averaged £200 a bed, some even then approaching as much as £300 a bed.

A discussion followed. Dr. Murray Cook (one of the members of the Lunacy Board), speaking of the cottage type of asylum in Germany, said that in that country a great proportion of the cases were very mild—so mild that here they would be dealt with in workhouses. He favoured having in all asylums a separate detached hospital for the special treatment of all recent cases which presented a prospect of cure. In his opinion, more attention needed to be given to single rooms, which were often too small. As to the heating, he preferred steam coils; flues were often the source of much trouble, and should be abolished whenever practicable. Another matter requiring special attention was the airing court: it was often much too small and unpleasantly situated. Dr. Urquhart said the latest model in asylum planning was the East Sussex Asylum; in America the latest was the St. Lawrence State Asylum. Mr. Clifford Smith and Mr. Gordon Smith also spoke. Mr. Hine replied, and the meeting then terminated.

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A NEW LONDON THEATRE.

Thursday evening, February 21st, was definitely decided upon by Mr. Henry Lowenfeld and Mr. G. W. Lederer for the opening of the new Apollo Theatre in Shaftesbury Avenue, which has been built from designs by Mr. Lewin Sharp, of Adelphi street, W.C. Mr. Louis N. Parker, in a descriptive pamphlet, says:—"To describe this beautiful building properly, one ought to have the pen of an Addison. The whole thing has been carried out so thoroughly in the style of the eighteenth century that the current language of to-day seems too crude to deal with its delicate perfection. The front, in Shaftesbury Avenue, reminds one of a pavilion in the park of Versailles, although, at the same time, it asserts itself as undoubtedly a theatre." The heraldic device which figures on all draperies, chairs, curtains, etc., represents a mystic lizard supported by two lions rampant, and is reproduced from a badge presented to Mr. Lowenfeld by a tribe of Goman gipsies connect with his ancestral estates in Austrian Poland, as a token of their goodwill. It appears, also, upon certain dainty silver cigarette cases, match-boxes, and brooches which are to be sold in the theatre, and which are guaranteed, on the word of the said gipsies, to bring good luck to the fortunate possessors.

The New Electric Station for the East Ham District Council is being ventilated by means of Shorland's Patent Exhaust Proof Ventilators, the same being supplied by Messrs. E. H. Shortlands and Brother, of Manchester.

Tramore Church, Co. Waterford—Messrs. J. King, Ltd., Engineers, of Liverpool and Donabate, have now in hand the hot water heating apparatus at the above, and also at Annestown Church, Co. Waterford.

CORRESPONDENCE.

TREATMENT OF OAK.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Your correspondent, "F. H. A.," although he modestly claims to know very little about oak and its treatment, has really very fair general ideas thereupon. I have had oak—and in large quantities, too—pass through my hands, for more than forty years, but often think how little I know about it. Some people, for instance, are sure they can tell a Dantzie plank from an English one instantaneously. So can I, sometimes, but not always. Your correspondent is quite right that bees' wax must never be used for oak out of doors; neither must varnish. The best treatment, I think, for exterior work, is to oil it with linseed oil. I don't follow your correspondent when he speaks of grey oak and black oak in two separated mouthfuls. All new oak is much the same colour—some kinds are a little lighter than others, but not materially so. Then, there is brown oak, which grows mostly, I believe, in hedge rows, and is much sought after by cabinet makers.

The application of the fumes of ammonia for darkening oak is generally favoured, but whether it does harm to the material itself is a question I should not like to answer in the negative. If oak, that has been so stained, is planed up again, the shavings invariably seem rather rotten. An inch a year, certainly, is not sufficient for properly seasoning oak. I should not think of using an inch board until it had been down three years, even if it had been exposed to plenty of air all the time. An eight-inch plank we have had upon the racks for fully twenty years was cut up, for some misere, a few weeks ago, and was quite wet inside. Oak, at all times, to use a shop expression, is "terribly treacherous"! I fitted up my own private offices, twenty years ago, entirely in oak. Nothing has touched it since the day it left the bench, and the wood has now toned down to a lovely rich brown. Some people like to stand their boards and planks up on end, others lay them flat. In the latter case it is of the utmost importance that deal raps are laid between each board or plank, and that the raps in question are exactly perpendicular, one over the other. If this is not particularly attended to, the stuff is bound to twist.—Yours, etc.,

HARRY HEMS.

Exeter, 18th February, 1901.

WAR DEPARTMENT CONTRACTS.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—Referring to your amusing story about War Department contracts on page 622 of last issue, I wish to correct your statement "that the War Department never contracts in the ordinary way," but has its own schedule of prices. Repairs and small services under £400 are carried out by the Triennial Contractor, who holds his agreement for three years. This district work is usually measured up on completion, and priced out according to the W.D. Schedule.

All large buildings, however, are let out to contract in the usual way, and have been so done for years. The great barrack scheme at the Curragh is a case in point.—Yours, etc.,

JOHN T. REA,
Surveyor, War Department.

Curragh.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

W. M. & Co.—The address given in our columns should find the gentleman in question. We have posted you the architect's address.

A. W. (Armagh).—We share your surprise that measuring rods are not at present advertised in our columns. We placed your order with Messrs. Booth Brothers, of Dublin, who, we presume, have executed it.

A. (Surrey, England).—The best book we know of treating of scale and drawing instruments is Stanley's *Drawing Instruments*, 5s., which you can procure from the author at Great Turnstile, London.

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The subscription to the "*Irish Builder*" is now reduced to 4/4 per annum (postage paid). Subscriptions are payable in advance, and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street, Dublin.

VOL XLIII.

FEBRUARY 27, 1901.

No. 987.

THE PRESSURE OF AMERICAN COMPETITION.

Of late there has been a greater appreciation of the reality of American competition. The British manufacturer has awakened to the fact that he no longer possesses a monopoly of the great markets of the world; he has found on looking deeper into the question that not only is this so, but the New World has in many branches of trade, hitherto an unchallenged source of wealth to him, outstripped the old country, and is to-day leading the way of trade.

Commercial Struggles of the Future

In days of old kings made war upon one another for mere greed of land that brought them no added wealth, and nations were ready to engage in deadly strife for mere questions of sentiment or so-called honour. To-day, if land is fought and struggled for, it is because it gives new markets and opens up new fields for industrial enterprise. In the future, it may be assumed, that wars will be largely fights for commercial supremacy, and not the least hardly fought will be those in which no sword is drawn, and their bloodless combats will partake of a character not less fierce than the old death-dealing struggles.

The America of a Past Generation.

A few generations ago America was but a feeble competitor of British manufacturing enterprise; to-day America has wrested from England the lead in many lines of trade.

A "Times" Reprint.

We have before us an advance copy of a series of articles reprinted from the *Times*, entitled "American Engineering Competition.*" For many years British manufacturers were accustomed to consider their position absolutely unassailable. England possessed a unique geographical position, an abundant coal supply, a population peculiarly fitted to deal with great questions of industrial activity, in which the qualities of dogged perseverance commonly associated with the Anglo-Saxon breed took heavily, the command of the seas in times of much unrest, and above all, in more recent years, free trade, which meant the unlimited import of cheap food stuffs for the maintenance of an industrial population. But the tale of how all these advantages have, to a large extent failed to retain pre-eminence in manufacturing industry is unfolded in the book to which we refer. The articles reprinted appeared in the *Times* during 1900.

Opinions Thereon.

The details set forth are the work of a Special Commissioner, who visited the United States for the purpose of enquiring into the entire question of America's industrial posi-

tion, present and future, and its bearings upon British trade and prospects. The general opinion expressed by critics has been one of agreement with the somewhat pessimistic views of the writer. For the feelings of an Englishman accustomed to look upon his native country as the home of all manufacturing industry in iron, steel, shipbuilding, and the finished articles of machinery, due allowance must be made, and for the national revulsion of feeling resultant on the revelation of the vast importance and reality of American engineering competition.

What Americans Say.

As marking the opinions of many thoughtful Americans, we cannot do better than quote some remarks recently made by the *Iron Age* (of America), which devotes a thoughtful article to the prospects of the American trade in iron and steel with foreign countries. Referring to this, the *American Architect* remarks:—"As a consequence of the terrified groans of the English newspapers, probably, the American public has been led to imagine that our iron-manufacturers were on the point of seizing upon the trade of the whole world, and could defy competition everywhere. The facts, however, are very far from bearing out this idea. Naturally, the trade of any country, in iron or anything else, will go to the one who can furnish the goods to the consumer at the lowest price; and for two or three years circumstances have been such that American mills could supply consumers in England, and even in France and Belgium, with iron at a lower price than that demanded by their own mills. Among these circumstances, the most important has been the high price of coal. The English coal-mine owners, discovering, or pretending to have discovered, that the mines were nearly exhausted, made a sudden and enormous advance in prices, and the owners of coal-mines on the Continent, thus relieved from the presence of English competition, naturally followed suit. As the cost of coal is a very large item in the expense of production of iron, it was necessary to raise prices of iron to the point at which it could be produced without loss; and the American mills, which got their coal at the old prices, thus enjoyed a considerable advantage. Moreover, as the combined American mills, under the protection of the tariff, were able to force their American customers to pay a profit of two or three hundred per cent. on the iron that they were obliged to buy, it was for their interest to ship their surplus goods to any place at which they could be sold for the bare cost of production, simply as a means of avoiding the accumulation of unsold stock, which might cause a break in the immensely profitable home trade. Again, outward freights on iron have been for two or three years very low. It is said that at one time iron was actually sent from Liverpool to London by way of New York, a distance of more than six thousand miles, at a saving over the cost of transportation by railway over the two hundred and twelve miles separating the two places; and, although outward freights from this country are in more demand now than they were a few years ago, steamers which have brought over cargoes of foreign goods are glad to take iron back again, in place of ballast, at low rates."

What the Special Commissioner Saw.

The *Times*'s Commissioner found occasion to express his astonishment at his own countrymen's want of knowledge of the growing manufactures of America, and the indifference displayed to this increased rivalry, to which he adds the significant observation: "a rivalry which will surely come as soon as the present excessive home demand in America slackens," i.e., a vastly keener competition than any hitherto experienced. Eleven years ago, he says, both countries imported more than they exported.

A Few Startling Figures.

By 1898 our exports had fallen to £294,013,988 in value, but our imports had risen to £470,378,583, so that the excess of imports over exports had risen to £176,364,595, while in the same year the Americans had sold over 128 million pounds worth more than they bought. As the writer himself remarks, it is a little misleading to quote crude statistics in this way. Yet nevertheless the figures must give rise to much reflection.

American Methods.

The information gained by this Commission should prove of the utmost value to home manufacturers. The state of things which were found existing on the other side of the Atlantic are described very fully; everywhere flourishing and growing factories, and a demand far exceeding the supply, works everywhere run on the most modern and up-to-date principles—the humbler workers taking a keen interest in the rates and conditions of production, and working their level best in their employers' interests, which result is but the self-interest of the American worker.

Trades Unions in America.

Not the least interesting article is that in which is described the less virulent and aggressive character of the American trades' organisations. Piece work is not prohibited, and day and night shifts are almost invariable in the larger works, thus at once halving the capital outlay.

He Says Trades Unions must go.

The Special Commissioner does not hesitate to express himself forcibly on the subject of the militant trades' unions of Great Britain, and to say with the utmost deliberation that if Great Britain is to hold any show of her present commercial influence these organisations must be crushed, and left without the power to cripple and destroy the industries of the country. America is to-day, as he says, "the house of cheap steel;" she has already passed England for the premier position of an exporter of that material, but England still retains the lead in many branches of trade machinery, though even that is now threatened.

American v. English Machinery.

To take one instance alone within our ken—the printing trade. All the finer time-saving machines—the linotype, such machine as the Howe Victory printing engines, &c., are all of American manufacture. The reason for this state of things in regard to machinery in particular is ascribed to the superior receptiveness of the American manufacturer to new ideas. He finds out what a particular trade wants, what difficulties it has to cope with, what labour-saving elements it most lacks. He sets to work, and never rests until he has devised a machine to mitigate these conditions. The reverse is the British practice.

The American's Care for his Customers.

A certain number of stock pattern machines are made, and unless the genius of some individual effervesces, or a strong outcry is made for improvement, the stock pattern remains the standard for years, nay, generations. In a word, the American manufacturer has better business methods and instincts, and above all, studies his customers and their wants, and he has the immense advantage of a heartier co-operation on the part of his employees.

Protection.

The subject of American protection is too large a one to deal with here, but suffice it to say, that the period of extraordinary commercial development, through which America is passing, resulting in a great home demand, concurrent with protection against imports, enables American engineering firms, with their superior facilities for rapid work, to sell at a very low rate in the foreign market, while they take full advantage of the prosperity at home by selling at a high rate.

The Articles Themselves.

These series of articles are unquestionably one of the ablest contributions that have been made to a great imperial question, and well repay either the political economist or the manufacturer for the time expended in a study of them.

CONCERNING NEW STREETS.

By the courtesy of the editor of *Country Life Illustrated*, we are again favoured with an advance proof of the article entitled "Concerning New Streets," which appears in the current issue of that periodical.

We make no apology to our readers for giving some lengthy extracts from the article in question—the subject is of such importance and so ably dealt with, that we revert thereto with much interest.

In no city in the Kingdom more than in Dublin is there

necessity for taking to heart the statements of this paper. Dublin is blessed with the most delightful natural surroundings, its suburbs are almost unequalled for charming situation of hill and dale, sea coast or river side, yet is there any town which has more utterly uninteresting suburban architecture? Money is lavished on many of the houses, but it is doubtful if these be not the worst of all. Terrace after terrace, alike in the baldness of desolate uniformity or repulsive in vulgar, tawdry, architectural detail, weary the wayfarer, and oppress the occupier with the effect of vulgar obtrusiveness. Says *Country Life*:—"One of the most hideous operations to be witnessed, either on the outskirts of London or in small provincial towns, is that which the builder describes as developing a new estate. Naturally he chooses the most beautiful spot for it, a spot where there are heights and hollows, and green fields and trees. Upon this scene he brings a gang of men, who begin at once to deface and destroy. They cut down the trees, remove the hedges, and begin to lay out wide roads with kerbs and footpaths, till the old scene is no longer recognisable. Where there is a very great demand for houses all this is necessary, and very quickly the builder's confusion gives place to rows of more less pretensions brick villas, and a cosmos, such as it is, evolved from chaos. More often the speculator is well in front of the demand, and when his roads are made he sticks up a notice-board, 'Freehold Plots for Sale,' and sits down to wait—it may be for years, it may be for ever—till customers come along to purchase sites. Needless to say, the Local Government Board keeps an unsleeping eye upon these operations, and has included in the Model Bye-laws certain regulations 'with respect to the width and construction of new streets.' The first of these ordains that whosoever lays out a new street intended for carriage traffic shall make the width thereof 36ft. at the least. Now the advantage of having town streets wide is too patent to require anything to be said—36ft. is a fair allowance—but in places where building proceeds slowly the regulation is much too rigid. It certainly is not needed at the early stage for purposes of ventilation, and still less for the traffic. An example of what it leads to may be seen near Woking at the present moment, where a beautiful common has been cut up and spoiled long before the space is needed for human habitation. The remedy would appear to be simple. If the clause were altered so as to make it read 36ft. between the rows of houses, then a narrower roadway would serve the purpose of all the slender traffic that could be expected at first, and the space would still be available if the place at any time did really assume an urban character—a by no means certain result, as there are near London alone miles of streets without houses where kerbs have been laid for years. Till that event takes place there is no reason why the occupier should not be allowed the use of the land in front of his house, it either being left in its natural beauty, or subject to such slight improvement as would be ventured upon by one who had only the usufruct. Nothing would be lost, as the streets, if the place got built up, would be just as wide as under the present regulations, and a contrast to those of old towns where the builders seemed to delight in huddling them together."

Dublin has bitter experience of the truth of these observations. Witness the howling wilderness of red brick—"The Red Settlements" of the South Circular Road, and it is little better in the more fashionable quarters. In the seventeenth and eighteenth centuries Dublin had a fine taste in architecture. Some of these old Huguenot merchants' residences still remaining in the liberties of the city are picturesque in their decay, and quaint brick gable and high chimney stack and many-paned window show there was then a thought for the artistic, as well as the purely utilitarian. The delightfully delicate plaster ceilings of many Dublin homes were famous; and the crowning of all—that fine array of public buildings which includes the old House of Parliament, the Custom House, the Four Courts, and Trinity College.

The city has lately gained a large extension of its boundaries, and possibly in the near future may attain a yet wider area. Is it too much to ask that the building bye-laws of Dublin and the surrounding townships might be so framed as not at least to discourage a more intelligent and artistic school of building.

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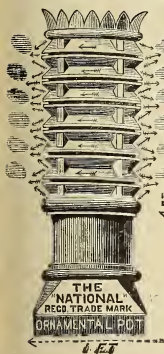
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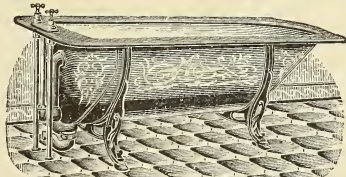
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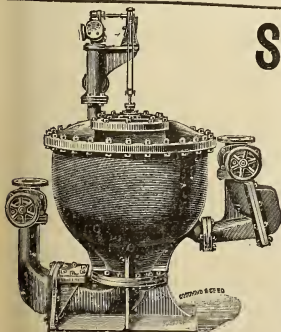
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THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.

BY BARRY PARKER AND RAYMOND UNWIN.

A Lecture delivered before the Society of Architects, and Published in the Official Magazine of the London Society.

The relationship of an expert to his client must always be rather a complex one. He is called upon to render a service to his employer, but it is he who must determine the way in which it shall be rendered. He is free to obey his employer's directions only so long as these accord with his own principles, or at any rate do not clash with them in anything that he holds vital; but in a large measure he must direct his employer, not be directed by him; his own reputation is at stake in every transaction. Not only is the relation a complex one, but if it is to be successful it should frequently be an intimate one. The doctor called in to set a broken bone, or the lawyer to transfer a property, need know little of their employer. But were the one required to treat a complicated malady, or the other to draw up a will, a personal knowledge of the employer and his affairs would be of the utmost value. In like manner the architect who is to design a shop or a warehouse need know only the business requirements of his client, but the one who is to plan him a house cannot very well know too much about his family life and his personality. If one could always spend a week-end in the old house of a client before designing him a new one, it would be a good thing.

Certainly it is in the domestic branch of our work that our relations are most complex. Each commission is a fresh problem full of human interest, the right solution of which demands that it shall be considered from many aspects. We must look upon the task primarily as the providing of a suitable setting for the life of our client and his family. In this connection not only his actual wants, but his ideals of life have to be taken thought of, as also his financial position. Nor must we overlook our possible influence upon him through his house.

Again, each house appeals to us as a new creation of our art. Here we are in much the same position as the portrait painter. The likeness truly is that of the sitter, but the interpretation of it, the setting and the colour—in short, the art of the picture—belong to the painter. So, too, the house as a habitation belongs to and must satisfy the client, while as a work of art it belongs to and must satisfy its designer. In this matter we stand as guardians alike of our reputation and of the general interest of the public as beholders of the building. The right of the public to consideration is much clearer than many seem to realise; the building is forced on them, they have no option but to see it. Much of the joy of life comes from the beauty of the place we live in, as much of the gloom comes from its ugliness. No one who might add to the joy of building something comely has any right to add to the gloom by building what is ill-looking.

I do not anticipate that these considerations, or those which we shall come to presently, are new to you. But it is probable that each would arrange them in a different order of relative importance, so that in no two of us is our attitude towards the problem exactly alike. In no house can every advantage be obtained; each must be somewhat of a compromise; in each there must be a sacrificing of what we deem the less important to secure what we esteem of greater value. It follows that the variety of our attitude must produce individuality in the results. When, therefore, you did me the honour to suggest that I should bring this subject before you, I felt that the best response I could make would be to try and give you, as from one fellow-workman to another, some account of the way in which we approach this particular piece of work, hoping that in comparing this and the results which we shall show with other methods and results you might find some little interest.

Suppose then that we have received a commission for a dwelling-house; that we have made ourselves sufficiently acquainted with our new client's wishes, his mode of life and habits, by getting him to write us very fully of everything he would like to be specially considered, discussing points with

him, or visiting his home, as circumstances may suggest; and, further, that we have made full notes of all the instructions and information thus gathered for our own use; the first thing is to visit the site and devote some time to thinking out the problem on the spot. The site is the most important factor to be considered, for it usually suggests both the internal arrangement and the external treatment.

If the site is a large one the position of the house upon it must first be determined. In past times the house was regarded mainly as a shelter, and this greatly influenced the choice of its position. There is no doubt that to the weakening influence of considerations of shelter in the choice of sites we owe much of that lack of fitness to its position which is so common a characteristic of the modern building. But we do not to-day build so much shelters for people who live outside, as dwellings for people from whence they may occasionally go out. A primary consideration then must be to so place the house as to afford its occupants the greatest possible enjoyment of such beauty of adjacent country or grandeur of distant view as the site can command. While doing this, however, we must so place and design the house that it shall not stand out as a disturbing excrescence, but shall look at home in its place, in harmony with its surroundings.

This consideration of the house as a detail in a larger picture will bring us to a determination of its general form, its treatment and its colouring. Some positions demand a lofty building to crown or complete a spur of rising ground, for example, while others seem to suggest that it be kept as low as possible, as when it nestles under some protecting hill-side. And in the country at any rate the low house is usually more successful, more in harmony with the scenery, perhaps because it is suggestive more of man's dependence upon nature, less of his defiance of her powers. Some natural terrace may suggest a long house with all its rooms facing one way, or a ridge may indicate a double-faced house commanding the outlook down over each slope, or perhaps a steep hill-side will ask for a house following its lines and clinging to it story by story, while a gentle slope will demand a general grouping of the roofs to give a sense of stability by contradicting it.

In the choice of materials and colouring, harmony rather than strong contrast should be sought. There is only one sure way of obtaining this at all generally, which is, of course, to keep to local materials and local ways of using them. At any rate I think we may lay it down that strong reasons of use or economy are needed to justify a departure from these. Where a departure is made let the contrast with what is usual in the district be as slight as may be. We do not enough consider when we introduce for the first time into some valley a bright red roof how it will haunt the eye from every point of view, and may go far towards marring the beauty of the whole scene by destroying its restfulness. At any rate we should let the surroundings which are to constitute the picture suggest the colouring of the new object we are about to introduce just as much as its form. In some places a low toned colour scheme, as stone walls and grey stone or slate roof, seems most fitting, in others the warmth and brightness of bricks and tiles; some invite the homeliness of white-wash, while others suggest the deep colouring of green or purple slate. Whatever it is, some definite colour scheme should be adopted, and colours of paint and any enrichments made to contribute to it.

Greatly as must the site influence the external treatment of the house, its internal arrangement will be even more definitely dictated by it. The position of each room in relation to the points of the compass, and the outlook should be determined on the spot. It is now pretty generally realised that no sacrifice is too great which is necessary to enable us to bring plenty of sunshine into all the main living rooms. In the South of England perhaps some moderation must be observed in applying this rule, there being no inconsiderable number of days on which a too sunny room may become unbearably hot, and, where the size of the house will allow of it, to have an east and west room, is often a great boon. But over the greater part of our country, certainly in the Midlands and the North, the importance of arranging for the

few days when the sun is oppressive is small indeed compared with that of planning to suit the many days when every hour of sunshine is of the utmost value. The general rule then would seem to be to so contrive as to get the sunshine into a room at the time when it is likely to be most occupied. Let a study or breakfast-room be east or south-east, a general living-room or drawing-room south and south-west. A good western window in the room we most occupy in the latter part of the day gives us many an extra hour of daylight; while the opportunity it affords us of habitually seeing the bright colour of sunset is a privilege which is worth some effort to obtain. A kitchen is best north-east or east, for the first coming down into the fireless house may well have its cheerlessness reduced for the servants by what sunshine is to be had at an early hour; later in the day, when the kitchen is hot with cooking, the heat of the sun should not be added. A bathroom and bedrooms, too, are pleasant with an eastern aspect, though some cannot sleep in a room into which early sunshine can come.

Next only in importance to such considerations of aspect, and certainly important enough to modify them somewhat, is the question of prospect. For a pleasant outlook is a boon only less great than a sunny aspect. We must not ignore a fine view, even when it can only be had to the north, and much less must we allow any trivial conventions, like the old commonly accepted idea that the front of the house should be to the road, to betray us into sacrificing such solid advantages as sunshine and a pleasant view. In fact, to produce a good plan one should go to the site without any preconceived conventions, but with a quite open mind, prepared to think out each fresh problem on the spot from the beginning, and to receive all the suggestions the site can offer. I hope you will pardon me if I seem to insist unduly on the importance of so elementary a principle as that of building to suit each site. But one sees the principle so commonly disregarded that it is needful to emphasise it. Not only do we find houses perched uncomfortably on the shoulder of a hill, or thrust into prominence one way or another regardless of their effect on their surroundings, but, in arrangement, the disregard of the site is carried so far that semi-detached houses are even built with their plans just reversed, so that a plan designed for the north end is made to serve for the south, or one arranged to suit the east side allowed to pass for the west.

A remarkably good instance of the disregard of site conditions has just come under my notice in a public competition for cottage plans asked for by the Tanfield Urban District Council. Two classes of cottages are asked for, and the conditions are such that in both cases the living-rooms have to be arranged facing north, whereas a very slight modification of the stipulated conditions would enable all the cottages to have their living-rooms facing south.

Before leaving the site one should be able to carry away not only detailed notes of drainage, water supply, levels, fine trees, views and aspects, but also a general idea as to the best arrangement of the rooms of the new house, an ideal plan to be aimed at, and a sort of mental sketch in block of the general form the new creation should take externally.

It would be only tedious to you if I were to go through all the details of a house, trying to deal with them in a general way. I will, therefore, now take one or two definite examples and explain how and why we worked them out as we did, trusting that the interest which attaches to any actual problem solved may come to my aid and redeem the details from tediousness.

We have chosen for the first example a country house designed for a site in North Staffordshire, partly because the site was not one to very obviously suggest or very imperatively demand a special treatment. The plot of land consists of a small field, long, and rather narrow; it is much the shape of a suburban building plot, though situated right in the country. The main road runs along the north-east end, and the ground rises on the far side of this road, cutting off all view in that direction. An accommodation road or lane forms the boundary on the north-west side, while the south-east side, as also the south-west end, adjoins agricultural land belonging to a large estate. The ground slopes from the

road towards the south-west; the slope being very slight at the top end, and increasing somewhat towards the bottom, suggests a level terrace on which to place the house. The land continues to fall away to a stream which runs in the bottom of a wide and not very deep valley; across this there is a very pleasant view, which becomes more interesting down the valley, and is finest to the south of the plot.

The client required the house to have a good comfortable living-room for the general family life; another good room for entertaining guests and callers; a small den for his own use, with desk, safe, sample cupboards, and gun-rack; four bedrooms, one to be a bed-sitting-room for an only son; a kitchen with the usual offices; outside there were to be wash-house, stables, coach-house, etc. The house was to be arranged to give as much open air life within as possible.

As the site is exposed to the prevailing winds, and the best prospect is in the direction from whence they blow, some form of court on to which the rooms might open suggests itself as a means of obtaining the needful shelter. The stable-yard not being very suitable for the purpose, the house is grouped round a very small central court, round which a corridor is planned fitted with sliding windows, so that it can be converted at will into a sort of small open-air cloister, by sliding the sashes down below the sill. This is roofed over at as low a level as possible to avoid anything of the feeling of a well, which a court as small as this needs must be might soon produce. The main roof also is made to slope away from the court in all directions, so that a good deal of sunlight may find its way in. On to this corridor the main rooms open with wide double doors, and the court being protected against wind on all sides it is possible in any weather, except when extremely cold, to have the living rooms open to the fresh air to a quite unusual extent. The kitchen, butler's pantry, front and side entrances, and stairs all communicate with the corridor, but so as not to destroy the privacy of the living rooms by obliging anyone to pass the doors when going from one to the other. Pleasing vistas are obtained from the rooms across the court, and from the corridor into the rooms, such as it is not often possible to contrive in so small a house. Provision is made in one corner for a ventilating stove to prevent excessive cold draughts in winter.

The living-room, as the most generally occupied, and, therefore, the most important room, is placed at the south corner, having the double outlook to south-east and south-west, and getting all available sunlight and the best of the prospect. It is not enough to give a room windows in the right direction, however; the room must be so arranged that it shall, so to speak, turn its face right, and the windows be so placed that they shall be naturally seen out of from the most usually occupied parts of the room. For this reason an angle window commanding the pick of the view is thrown out on the south-east side. This brings the sun well into the room, and at the same time provides a good well lighted position for the piano, from whence anyone can easily face to the whole room while singing. For similar reason the fire is put on the north-east wall, and, that a thorough sense of cosiness may always be obtainable, it is placed in a deep recess or ingile.

Now an ingile affords a very good instance of how easy it is to misuse the old examples which we study, and that in two directions. For while some neglect altogether the suggestions which they offer, others copy the old forms without troubling to understand them. To make use of old features legitimately, of course, one must first understand the reasons which called them into being; the difficulties which they were designed to meet; and when similar reasons or difficulties present themselves to us we may then avail ourselves of the solution which they indicate, not copying slavishly the details, but taking the principle and working it out to suit our own particular circumstances. The ingile, of open doors, shutters, and windows; the second was to afford seats near the fire, sheltered from the draughts, where the aged and feeble could rest, or anyone could keep warm in cold or rough weather. Incidentally, no doubt, our forefathers appreciated the value of contrast, the charm of the

ruddy fire-light space glowing red in the grey, ill-lighted building, and the cosiness of the sheltered low recess in the wide and lofty hall. To obtain this charm, as is often done, by forming an angle so small that one cannot sit in it comfortably, is merely to remove the fire further from the room; while, on the other hand, to arrange a large angle, as is also sometimes done, with a modern tiled register stove set in a chimney breast, is to lose the feeling of "sitting on the hearth," and the charm that springs from the fire being able to cast its glow all over the recess and to be seen from every part where one can sit. To adapt the angle to rooms of moderate size then and justify the space it occupies, it must be large enough to be comfortably sat in regularly: a place where one can live, not merely go to be roasted. The fire must be so designed as to have something of the feeling of the old fire on the hearth, and must not be cut off from the recess or in any way allowed to grow into a fireplace within a fireplace. It is generally well to make the whole recess into the hearth, and we often arrange for the fire to burn in a suitably shaped fire-brick hollow which answers all purposes excellently. Fenders are best avoided, and anything like a loose coal-box is a disadvantage. A coal-box can generally be contrived in the thickness of the wall. The inglenest, of course, be protected from cross draughts, otherwise the fire cannot be sufficiently exposed. When properly arranged and fitted with comfortable low seats, the inglenest always proves to be a favourite part of the room: the place where people naturally go to sit and rest.

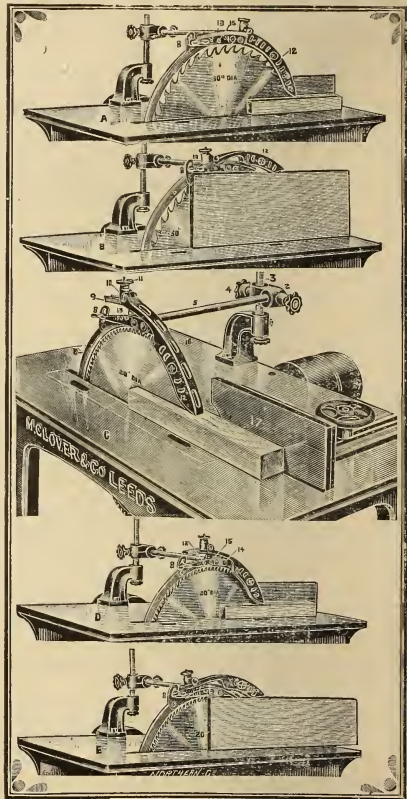
SAW GUARDS.

For over two years the question of saw guards, in view of steps taken by the Home Office, has been much before the notice of saw mill owners and users generally, and though much prejudice existed and much discussion was raised as to the possibility of a satisfactory and efficient guard being invented to meet the requirements of H. M. Inspectors, we are glad to be able to say that this is now quite exhausted, and to the mutual advantage of themselves and their employees, owners of saw mills have, to a large extent, endeavoured to supply the best possible protection against accidents with the circular saw.

To those of our readers who are yet interested in this question, we ask their careful attention to the illustration on this page, which shows the capabilities of the "Ideal" Guard, patented and made by Messrs. M. Glover and Co., Saw Mills Engineers, Leeds, respecting which we are able to say that it proves to be the only form of guard able to properly fit different diameters of saws, and, as may be well understood, guards which fit imperfectly must undoubtedly be highly dangerous. The "Ideal" possesses a very improved form of "riving knife" capable of fitting different diameters of saws. With the "Ideal" Guard sawing also may be done to the full depth of the saw, without it being necessary to elevate the guard or riving knife in the slightest. This is said to be impossible with any other form of guard, and it may be pointed out that in cases where guards have to be raised clear and above the saws, for deep sawing, it is impossible for them then to fit as closely as is necessary in order to secure real protection. The new patent "Ideal" Guard proceeds on absolutely new lines, users feeling confidence in adopting them (and we may here mention that the "Ideal" is being very extensively adopted in favour of other so-called guards, which, though initially perhaps a few shillings cheaper, are now being thrown aside as absolutely worthless and positively dangerous). So that if the expense is a few shillings more than that of crude guards, we venture to think this subject so vital to employers' interests and the interests of their men, that a small extra outlay is not likely to be considered by business men when the advantages are so marked. It is, therefore, with great pleasure that we are able to inform our readers that this "Ideal" Guard, possessing such superior qualities, is now recognised by all users of saws, and has been supplied to the leading firms throughout the United Kingdom with the greatest possible satisfaction. Further,

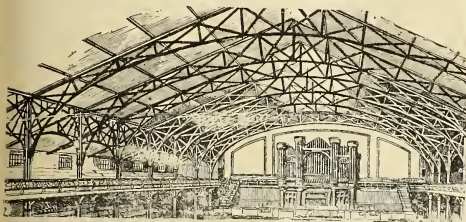
we may say, besides a large *clientele* at home, orders for these guards have been received from France, Belgium, Holland, Denmark, Norway, Sweden, Germany, Austria, Russia, India, South Africa, Australia, Japan, etc., etc.

In many of these countries we would point out, saw guards are not compulsory, and thus our readers will gather that the



"Ideal" Guard is adopted, not because saw mill owners are compelled to guard their saws, but in order to protect their workmen and prevent as far as possible the recurrence of the terrible accidents which hitherto so frequently were attendant on the working of the circular saw. For particulars of the above we have pleasure in referring our readers to the Patentees and Sole Makers, Messrs. M. Glover and Co., Saw Mill Engineers, Holbeck Lane, Leeds, whose specialities in machinery for expeditiously making Firewood, also, Saw Sharpening Machines, are so universally well known.

New Fireproof Substance.—Gypsigne, a new fireproof substance, has recently been tested by the British Fire Prevention Committee. Its composition is plastic hydraulic lime, coke, or sand, and asbestos compressed into bricks. To test its fire-resisting properties, a partition 10ft. long by 7ft. 9in. wide was built of gypsigne bricks in hydraulic mortar, with joints $\frac{1}{4}$ in. thick. The side of this partition, which was erected in the test hut, after having been coated with a thin layer of freelay, was exposed to the action of fire for the space of one hour, during which time the temperature rose to 2,050 Fahr. This tremendous heat was powerless against the gypsigne bricks, and all through the test the temperature of the outer surface of the partition was never once so high as to cause a match to ignite upon it.

CONSTRUCTIONAL**IRON WORK.****ROOFS.**

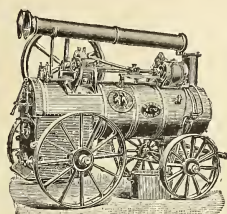
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NEW BOOKS.

HISTORY OF THE TOWN AND COUNTY OF WEXFORD, OLD AND NEW ROSS. Compiled by the late Herbert F. Hore, Esq., of Pole Hore, in the County of Wexford. Edited by his son, Captain Philip Herbert Hore. London: Elliot Stock, 62 Paternoster Row, E.C.

Many Irish towns—in fact, most Irish towns—have very interesting and historic memories, but in not a few they are only memories and traditions, their records are scanty, ill-kept, or lost. Of the more historic towns, such as Galway, Enniskillen, Cork, New Ross, etc., none have a more time-honoured past than Ross. Pleasantly situated on the high ground overlooking the Barrow, and containing, even still, many ancient remains, notably, the old gates, and the very interesting Friary Church of St. Mary's a Franciscan foundation. What remains of the Friary Church is more or less incorporated with the last century parish church—an unattractive structure. The chronicles of Ross are very complete indeed, and Captain Hore has succeeded in giving us an almost unbroken record.

There are no earlier records known of the town than those of the Minister's Accounts of the Earl of Norfolk, in the reign of Edward the First (1233). There is no doubt that the locality was chosen as a residence by Isabella, the wife of William Earl Marshall, who built the castle there, the town springing up subsequently; but the more favourable position on the river Barrow led to the creation of the new town, and the consequent decay of the first settlement.

The labours of Captain Hore and his late father have resulted in a most useful and admirable work, not alone of interest to antiquaries, but to all those who would wish to see every record of "the days of our fathers, and the old time before them," preserved. Fortunately, from the date mentioned, onwards to the present day, the chronicles of Ross are pretty complete, and it is a matter of congratulation that the substance of them is now collected, annotated, and published in a popular and interesting form. The work before us gives a fine description of medieval Ireland—the Ireland of the English settlement. The very monetary accounts themselves are replete with an interest to all who care for the disentanglement of the web of history, and in the Church of St. Mary's and elsewhere many monuments remain, several of which are of much architectural interest. A peculiarity of Ross, too, was the curious title of "Sovereign" given to its magistrate, a long line of whom is recorded in the chronicles of the town.

In the church was discovered, in 1806, by our old contributor, Mr. M. J. C. Buckley, a "Bambino," or ancient effigy of the Infant Christ. We believe we are correct in saying that a "Bambino" is unique in this country, though a common attribute of medieval Italian churches. In one of the Roman churches there prevails a curious custom of permitting children on the day of the feast of "The Bambino" to appear in the pulpit of the church and to preach, no doubt originating in a medieval application of the scriptural declaration, "Out of the mouths of babes and sucklings," etc. But we have never known of any such tradition in Ireland. The remains of the Church of St. Mary are in the early, pointed style of a purely English type of detail, and shows no evidence of the smallest native or Continental influence so frequent in many Irish remains. It is well worthy of study on the part of architects and antiquaries, for whom it should afford a very agreeable day's work in sketching.

Of the troublous days through which Ireland passed, Captain Hore tells us a great deal. One of the most interesting portions of the book is the description of the siege of Ross by the Cromwellians, and the dispatches of Oliver Cromwell to the Speaker of the House of Commons and to the governor of the town, Major Luke Taaffe; an incident in his career which seems to place the hated and reviled Cromwell in a more favourable light, for his conduct towards the garrison of Ross (whether dictated by prudence or kindness of heart) is marked by a humanity and honour which would not disgrace a commander of the present day, contrasting most favourably with

the barbarous cruelty of the siege and sack of Drogheda; for Cromwell allowed "The Governor of Rosse, with all under his command, to march into Kilkenny, or Laghlyn Bridge, with their arms, bag, and baggage, drums beating, colours flying, bullet in mouth, bandoleers full of powder, and match lighted at both ends." Such was the capitulation of Ross on October 10th, 1649, and Cromwell, to his honour be it said, having, "on his hand and honour engaged to perform," "did inviolably observe," as he said, those conditions,

Space forbids our dwelling further on these records of stirring times, and descriptions of once important places. Captain Hore brings his chronicle down to 1798, and there somewhat abruptly breaks off, on the plea that the history of the rebellion has already been so often written that no record is, from him, required, though, for our part, we could well have relished an impartial account of that troubled and sad period from his pen. Perhaps it is not too late to express the hope that in a future edition he will bring these records and chronicles of Ross down to the present day. The book is well produced, clearly printed on good paper, and attractively bound.

"MODERN OPERA HOUSES AND THEATRES." Re-issue.

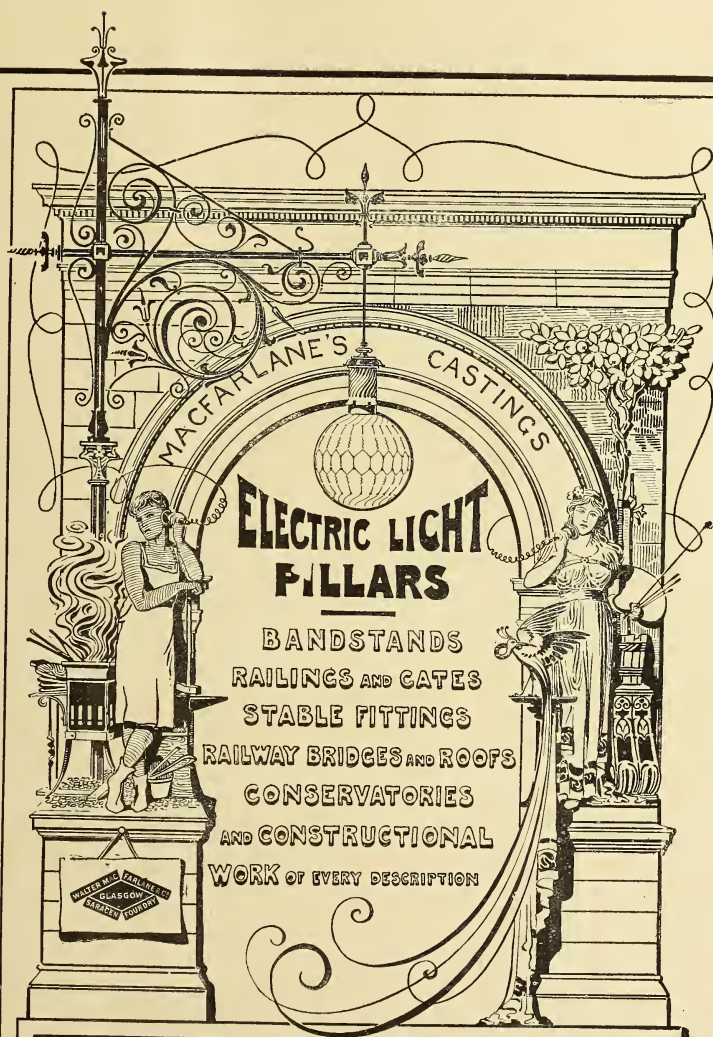
Mr. B. T. Batsford announces a second issue of Mr. Edwin O. Sachs' monumental work, "Modern Opera Houses and Theatres," which will be published in the spring. Mr. Sachs' work comprises three grand folio volumes, with two hundred and twenty plates, and over one thousand illustrations, and the first edition appeared in 1896 to 1898, after having required over eight years' preparation. The work is by far the most comprehensive on any special architectural subject published during the past century. The new issue will be in no wise inferior to the original, and will contain a special prefatory note dealing with the latest developments and improvements in theatre architecture, which Mr. Sachs has to such a great extent been instrumental in bringing about, not only at home, but in foreign countries.

BOOKS RECEIVED.

DEPARTMENT OF AGRICULTURE AND TECHNICAL EDUCATION, AGRICULTURAL STATISTICS.—Extent in statute acres and produce of the crops for the year 1900.

THE LARGEST ELECTRICAL UNDERTAKING IN THE WORLD.

The conversion of the New York Elevated Railway from steam to electric power will, it is expected, be completed by June next. The magnitude of the undertaking may be guessed from the fact that the system will be the largest of any yet attempted in any country. On two consecutive days of last year the railway carried 1,700,000 passengers, and during the heaviest period of traffic 280 trains, or 1,280 cars, were run per hour, the total for the 24 hours being 4,820 trains, making 43,850 train miles, and 2,180 cars, making 108,390 car miles. The record traffic figure for the system for 24 hours was reached in 1892 when 1,075,000 passengers were carried in one day. The system adopted comprises eight 8,000 h.p. three-phase Westinghouse generators in a single power station delivering power at 11,000 volts through three conductor cables, to step-down transformers located in seven sub-stations. These sub-stations are in convenient proximity to the railway lines, and contain 1,500 KW Westinghouse rotary converters receiving current from the step-down transformers at 300 volts, and delivering continuous current through single conductor cable to the third rail at 625 volts. The principal electrical contractors are the Westinghouse Company. It may be interesting to draw special attention to the fact that the idea of uniformity and symmetry is carried out to a much greater degree than has ever been done before, and there are, of course, many features which are novel, or which have only been used on a small scale hitherto.



WALTER MACFARLANE & Co..
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GLASGOW.

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
Waterford Convent	Superiress	Mr. W. H. Byrne, Architect, Suffolk-street, Dublin	No date
Alterations SS. Michael and John's Church, Dublin	Rev. Canon Gorman	Mr. G. L. O'Connor	—
Dunmanway (C.C. Cork), Bank	Munster and Leinster Bank, Ltd.	Mr. Arthur Hill, M.A.B.E., Architect, Cork	No date
Curate's Residence, Balheary, Co. Dublin	Very Rev. Wm. Hanley, Adm.	Mr. Geo. L. O'Connor, C.E., Architect, Dublin	No date
Diocesan College, Killala	Most Rev. Dr. Conny, Bishop of Killala	Mr. W. H. Byrne, Architect, 20 Suffolk-street	1st March
Alterations and additions to Furniture Stores, Dublin	Messrs. Beverly Smyth & Co., Dublin	R. M. Butler, Architect, Dawson Chambers, Dublin	15th March
Clocks, Electric Bells, etc., Mullingar Asylum	Committee of Management	R.M.S. District Asylum, Mullingar	8th March
Fourteen Labourers' Cottages, Howth	North Dublin R.D.C.	Mr. John O'Neill, Clerk, North Brunswick Street	6th March
Rectory, Downpatrick	—	The Estate Office, Downpatrick	7th March
Fifteen Labourers' Cottages, Strabane	Strabane R.D.C.	Mr. J. E. Sharkey, Strabane	12th March
Additions Rockwell College, Cahir	Reverend President	Mr. G. C. Ashlin, R.M.A., Architect, Dublin	No date
Alterations Mount Street	The Redemptionist	Mr. G. C. Ashlin, R.M.A.	No date
Alphonsus Convent, Limerick	Community	—	No date

TENDERS.

BALLINASLOE.—For Electric Light for the New Hospital Block at the Ballinasloe District Asylum:—Ampere Electric Company, 49 Middle Abbey Street, Dublin, £1,305 (accepted).
BELFAST.—For supply of a Second-hand 10 ton Steam Travelling Jib Crane, capable of lifting a weight of 10 tons at a radius of 25ft., for the Belfast Harbour Commissioners:—J. Hunter, 55 Waring Street (for R. Sizer, Limited, Hull) (accepted).
BELFAST.—For supply of 10 Tramway Trucks, each capable of carrying a weight of 10 tons on a 3ft. gauge, for the Belfast Harbour Commissioners:—J. Smith, Wolverhampton (accepted).
SHILLELAGH.—For erection of labourers' dwelling, with out-offices, fences, &c., for the Shillelagh Rural District Council:—J. Doyle, Loney, Tullow, £137.

SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp. Excavator and Bricklayer.

(Continued.)

Drainage.**Drains.**

To be constructed of glazed stoneware pipes of approved make, of the size figured on the drawings, laid with true gradient, and jointed in cement, with all necessary bends, junctions, and cleaning eyes.

Before being covered in the drains must be inspected and tested with water, or otherwise, as may be approved in the presence of the architect.

**Inspection and
Disconnecting
Pits.**

Build where shown on plan inspection and disconnecting pits, with one brick sides in cement, on bed of Portland cement, concrete, 1 to 6, and 6" thick under invert, dished for, and to have 4" glazed stoneware channel in bottom. A 4" Beauchiff's trap to be fixed between the disconnecting pit and the existing main sewer, and the pit to be covered with Jones' cast-iron galvanized cover (No. 5), 24" x 17", well bedded in cement.

The inspection pit to be covered with 3" Carlow flag bedded on sides in cement, in one stone.

The concrete benching in bottom, and brick sides for a height of one foot above benching, to be rendered in cement and sand, 1 to 2, and 3" thick.

Gullies in Yard.

To be of approved pattern with galvanized iron grid, 9" square, and to be set in concrete curb, with dishing and rebate for grid.

**Armstrong
Junctions.**

Provide and fix where shown on line of drain 9" Armstrong Junctions, with upright pipe as may be required, and to be covered with 3" granite cover stone, 18" square, bedded in mortar.

Cut out length of existing drain, and insert Connect to existing junction for new drain and leave all perfect.

Mason.**Stone.**

Except where otherwise described, the whole of the stone to be Ballyknocken, or other approved granite, truly worked as may be required.

All throating to be 3" deep.

The masonry to be carefully protected to avoid injury, and the whole to be cleaned down and left perfect at the completion of the building.

Door Steps

To be 6" thick, and of the widths and lengths shown on the drawings, finely axed on trends and risers, and back-jointed where required.

The sills to be morticed for studs of iron shoes to frames, and the mortices run with cement.

The ends of steps to be worked fair and rounded where required.

Window Sills.

To be 6" thick, and of the widths and lengths shown on the drawings, finely axed where exposed, properly sunk, weathered, stopped at ends with stools, throated and grooved for iron tongue of frame, and well bedded in mortar.

**Window and
Door Heads.**

To be of the size shown on the drawing, finely axed on all exposed surfaces, and stop chamfered.

SLATES for sale. Large quantity, new, very cheap for cash.—Apply, SHARP & EMERY, 17 Gt. Brunswick Street, Dublin.

ARCHITECTURE.—Draughtsman is willing to Prepare Scale and Detail Drawings for Alterations, &c. Accuracy guaranteed; Specifications and Quantities Terms moderate.—Reply to this Office.

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Colorist, Painter, etc., Paper-hanging and Glazing, thoroughly practical and reliable. Contract or otherwise. Address this Office.

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Scaffolding Ropes, Sash Cords, Baskins.

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[Estab. Jan. 1859.]

No. 988—Vol. XLIII.

HEAD OFFICE:

MARCH 13, 1901.

11 LOWER SACKVILLE ST.,
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Price 1d.

TOPICAL TOUCHES.

The last list of members of the Master Builders' Association shows several provincial recruits.

Councillor Clarke the other night admitted that the "caste" system of apprenticeship should be killed.

We think the labour representatives present at the last A. A. meeting, made a very poor defence of the "caste" system of apprenticeship amongst the city trades.

An American firm has again beaten the Britisher in a War Office contract. This time it is 30,000 felling axes for the troops in South Africa.

Saturday last was "Varnishing Day" at the Royal Hibernian Academy. The exhibition is a very fair one. The architectural room is not bad.

The reason why the latest War Department contract has gone to America is "the inability of English firms to supply promptly." If English firms don't "buck up" there won't be any engineering trade to save.

We hear on all sides warm appreciations of Mr. Good's splendid address on the labour question. The *Irish Times* devoted a leader to it, and the President of the Architectural Association suggested its publication in pamphlet form.

Dr. Bindon Stoney, the distinguished engineer, who gained so much praise in connection with the south wall extension works, writes us an interesting letter on the Carlisle Bridge main drainage controversy. It should go a long way towards settling the question raised by Mr. Byrne, J.P.

The decision of the Court of Appeal in reversing the ruling of the Court of Queen's Bench, upholding the power of the Local Government Board to fix the salaries of the County Surveyor and other county officials is to be regretted, because the local councils have not yet reached that level of public spirit which dislikes being served by underpaid servants. The Corporation of Dublin is decidedly more advanced in this respect.

Edward Cholomondeley Middleton is a surveyor and seemingly a militant one at that. The other day he was fined £5 and costs for assaulting the chief reporter of the "Birmingham Daily Mail," who had applied to the prisoner for some particulars relating to a big building estate, on being refused, tried elsewhere, got the information, and published it, with the result that he also got a blow in the face, which split his nose and knocked out one of his teeth.

The chief reporter of the *IRISH BUILDER* invites tenders for the supply of a second-hand suit of chain armour. His nerve is not what it once was.

Mr. Thomas Fee, merchant and Builder, Longford, who died the other day, was one of the most respected provincial contractors in Ireland.

The Star Insurance building in Dame street is beginning to take form, and promises to be a very seemly addition to that fine street. An Englishman is the architect.

The Ennis Asylum Competition conditions are framed on very unsatisfactory lines. We don't think many architects will be inclined to compete unless these rules are modified.

Mrs. Lidwill (widow of the late R. F. Lidwill, Builder and Contractor), announces that she will continue the business of her late husband. Mr. Thomas Johnson and Mr. Martin A. Bartridge will be associated in the management.

In common with most other journals, we were "had" over the Carrara marble combine, which it now turns out only existed in the imagination of a certain pushful London daily which shall be nameless.

Messrs. Maxwell, Hutton and Co. tell us we were wrong in attributing to them the manufacture of the famous "Dublin Coach." They did some alterations in 1853 to another coach much resembling the Dublin Civic Coach, for Her late Majesty.

The offices of the *IRISH BUILDER* are being remodelled, and we shall shortly be in possession of an exceptionally roomy and well lighted suite of offices. The architect is Mr. G. P. Beater, M.R.I.A.I., and the contractors, Messrs. Harvey and McLoughlin, Ltd.

"C. E.'s" able letters to the *Irish Times* on the Dublin Electric Lighting Scheme continue to excite controversy as to their authorship. For many months past they have appeared at intervals, and no clue to their origin can be traced. Some day perhaps this local "Junius" will declare himself.

We are told that our townsman, Mr. T. E. Hudman, architect, has had a great compliment paid him. He has been invited to contribute the Irish section to the monumental work on "Georgian Architecture," now being brought out in eight parts by the *American Architect*. The English section is being edited by Mr. Paul Waterhouse, the well-known London architect. This compliment to Mr. Hudman is the outcome of his lecture before the A.A.I. He has sent over thirty-six photographs of the principal Dublin buildings, taken by himself.

In connection with the gigantic Steel Trust, it is stated that the manager, Mr. Charles D. Schwab, will receive a yearly salary of £160,000, the largest paid in America. He was Mr. Carnegie's manager, and 20 years ago began life as an ordinary labourer in Carnegie's works, at £50 a year. He devoted his days and nights to the study of steel, until he was recognised as the greatest expert on the subject in the States.

THE
ARCHITECTURAL



ASSOCIATION
OF IRELAND

CLASS OF DESIGN.

THURSDAY, MARCH 14th.

"A Gamekeeper's Lodge."

Mr. R. C. ORPEN.

THURSDAY, MARCH 28th.

"Criticism of Drawings."

Mr. R. C. ORPEN.

ARCHITECTURAL HISTORY CLASS.

MONDAY, MARCH 11th.

"Renaissance in England and Ireland."

Mr. F. G. HICKS.

MONDAY, MARCH 26th.

"Modern Architecture."

Mr. F. BATCHELOR.

BUILDING CONSTRUCTION CLASS.

THURSDAY, MARCH 7th.

"Sanitary Plumbing."

Mr. T. BAIRD.

THURSDAY, MARCH 21st.

"Criticism of Drawings."

Mr. T. BAIRD.

F. B. HICKS
E. BRADBURY } Hon. Secs.

22 Clare Street.

—: O:—

Some Hints Regarding Coloured Cements

Coloured cements are no novelty in the sense that they have never been produced before. There has always been more or less objection to the use of coloring materials in the making of cement mortar or concrete for the reason that unless great care is taken in the choice of coloring material the cement is very greatly weakened. While many engineers and contractors use lamp black in their cement mortar to give it a better wearing colour, others object to it on the ground that it is apt to "run" or fade and will soften the mortar. There is undoubtedly some truth in this, says one of our contemporaries, for lamp black is an impurity in the cement that does not increase its adhesive power, and it has been proven by experiment, we believe, that the tensile strength and also especially its compressive strength are lessened by the addition of this coloring material.

It is a safe rule to follow that no coloring material should be used except an oxide, and this should be as pure as it can possibly be obtained. It must, above all things, be free from sulphur. In preparing the mixture for a coloured cement mortar no more than 8 or 10 per cent. of the coloring material should ever be used, and the more the per cent. falls below this mark the stronger will be the work. Great care should be taken to thoroughly mix the neat cement and the colour before any other mixture is made.

If these rules are carefully followed no notice need be feared from the use of coloured cements. As the ordinary colour of cement mortar can be easily regulated by the kind of sand used for the work, and as pure colours are expensive, it is not probable that coloured cement mortars will ever gain much of a foothold except for decorative work.

THE QUARRIES OF CARRARA.

WHERE SOME OF THE WORLD'S FINEST MARBLE IS OBTAINED.

The Marble.

Carrara marble is known throughout the world, yet few of the many tourists who are whirled along the Mediterranean railway from Rome to Genoa ever stop to visit the spot from which this famous stone is obtained. Carrara lies on the railway between Pisa and Florence. All the inhabitants of the little town are directly or indirectly interested in the quarrying, working and shaping of the marble, and the glare of marble dust and marble meets one on every side. The marble might be expected, and in place of craning the neck to gaze down into the bowels of the earth, one only has to admire the long, irregular rift in the flank of the mountain, for the quarrying is all done on the surface, and does not require the construction of pits or galleries. The quarries have been likened by one writer to a cascade of water suddenly hardened into stone.

Many violent Deaths Occur.

The percentage of men who meet horrible deaths in the quarries is very large, notwithstanding the fact that powder and not dynamite is used. Of course many of these accidents are caused by carelessness on the part of the workmen. When the great blocks are once detached, they either roll down the mountain, or are lowered to the desired place by means of rope and tackle. No machinery is employed, and all work is done with the crudest appliances. A blast is announced by three long notes on a horn, but little attention seems to be paid to this signal by the workmen, and many terrible accidents result in consequence.

A Curious Custom.

A few years back, when accidents occurred, the cathedral bells were tolled to give warning to the anxiety and anguish of thousands of poor families. The custom has now been abolished, and the workmen all leave the quarries as soon as the accident occurs, in order to assure their families of their safety, and they are allowed their full day's pay. The pay of the workmen is wretched, varying from 60 to 80 cents a day. A blast is very exciting to a stranger, who is usually accompanied by a guide, who contrives to get him in a place of absolute safety during the explosion.

Blasting the Marble.

The marble is blasted high up on the peak, and the pieces bound or leap downward until they strike some obstruction, or the valley below. Formerly all the immense chunks of marble had to be transported by primitive carts hauled by oxen, but now the railway affords an easy means of transporting to the market. The huge trucks are met everywhere floundering along, flinging great clouds of choking white dust in their train, or splashing mud, which is white in this remarkable locality. Each car is drawn by 18 or 20 pairs of oxen, which are covered with the white dust which is everywhere. They are goaded by their cruel drivers, for the Italians are notorious for their cruelty to animals.

An Interesting Visit.

An interesting excursion is to one of the quarries which were worked by the Romans, and the quarries show how primitive were the means employed by men of antiquity. They first marked out the block upon the solid mass, and they actually cut it out by hand labour. In many places one can still see blocks which lie embedded in the rubbish caused in quarrying and shipping them. The Romans split their blocks into slabs by inserting wooden wedges, and keeping them continually wet until the swelling of the wood burst asunder the stone. A Roman altar was unearthed some years ago near the quarries, and a few rusty implements have also been discovered.

Carrara marble has been a favourite with sculptors for nearly 2,000 years, and to-day it is nearly always used by the sculptor in preference to marble from another locality. It is also largely used in decorating churches.—*Scientific American*.



Ballycastle.—A meeting of the Rural District Council was held on Saturday last—Mr. O'Kane presiding. The Local Government Board forwarded a communication regarding the plans of the proposed labourers' cottages, and it was decided to send a copy to the Board's engineer. The tender of Mr. Patrick M'Bride to plant the fence at Bonamargey graveyard for £3 10s. was accepted.

Belfast.—**BUSINESS PREMISES, BELFAST.**—No. 39 High-street, Belfast, has recently been altered to accommodate a clothier's business. The work was carried out under the supervision of Mr. W. J. Fennell by the following contractors—Mr. J. Andrews, the shop front; Mr. W. Agnew, the interior alterations and fittings; Messrs. Gilmore and Lytle, the electric lighting; painting and ceiling decorations, Mr. John Moore; and polishing, Mr. Edward Killen.

Belmullet (Co. Mayo).—An effort is being made to raise a sufficient sum for the building of a glebe house for the parish of Belmullet. The present Rector has been obliged to leave the house in which he has lodged owing to its sale. The collection was started with a donation of £75 from the "Visitor to Mr. Greene" Fund, also a number of smaller contributions, including one from the Bishop, making up the amount to £100. With other subscriptions, generously given by the parishioners and those of the neighbouring parishes, the Building Fund amounts to £457, but another £300 is required.

Blanchardstown (Co. Dublin).—The North Dublin Rural District Council want tenders for ten labourers' cottages from the designs of Mr. Denis Morris. On Wednesday last the Council considered tenders for fourteen cottages at Howth.

Carlow.—**KNOCKBEG COLLEGE.**—The design shows the building to be of the classic order. There will be a handsome portico, enclosed by four corinthian columns, in the centre, under which the main entrance porch is situated, and at each end there will be a pediment of similar design. In the centre of the main building there will be a belfry and clock tower. The structure is designed to accommodate 70 pupils, and will be fitted up in the most modern style.

The refectory and study hall will be on the ground floor, rectors' and professors' apartments and oratory on the first, with two large dormitories on the top floor. Special attention is being paid to the sanitary arrangements, which are to be in a separate block, connected with the main building by a corridor.

The college is situated in a most picturesque position on the banks of the Barrow, about two miles from the town of Carlow.

The firm of Moore and Aylward, civil engineers and architects, 184 Great Brunswick-street, Dublin, were the winners of the competition.

Cork.—**THE POST OFFICE.**—This contract is being carried out by Messrs. J. Delany and Co. At the outset very great difficulties had to be overcome by reason of the soft nature of the soil, but this has now been overcome by a splendid arrangement of steel girders, placed in grid-iron fashion (designed by the Board of Works' architect, T. J. Mellon, Esq.), and then embedded in concrete over the entire area. This now being nearly completed will enable the contractors to go on more speedily with the work, combined with the fact that a large number of stone-cutters are, and have been, employed preparing the stone-cutting. The entire facade will consist of beautifully-cut local limestone, and the design

altogether reflects great credit to the Board of Works architect, Mr. T. J. Mellon. The contract for this work is about £20,000, and will be completed in about two years. Depth of concrete under girders, 18 inches; height over girders, 3 feet.

Dunshaughlin.—Mr. Barnewall Crofton, Inspector Local Government Board, held an inquiry at Dunshaughlin respecting a proposal to build 81 houses under the Labourers' Acts. The new cottages were chiefly proposed in lieu of houses which had been condemned as unfit for habitation. A great many of the cases were strongly opposed on the ground that the land being chiefly in grass there was no necessity for labourers in the district. One portion of the scheme was to build a block of seven cottages on the site of some ruins in the village of Dunboyne. Mr. Morris, Clerk to the District Council, explained that there had been expended already £18,000 in building 125 cottages, and that it was now proposed to borrow an additional sum of £13,721. The existing rate under these Acts was 1½d. The rents of the cottages and half an acre averaged 1s. a week, and there was only £5 rent due in December last on the entire 125 cottages.

Dublin.—**NEW OFFICES FOR THE NORTH BRITISH AND MERCANTILE.**—What will doubtless result in a great city improvement is now in course of progress at the corner of Dawson-street and Nassau-street. Morrison's Hotel, one of the best known establishments of its kind in Dublin, is being demolished, and on its site will be erected palatial offices for the North British and Mercantile Insurance Company, whose present city offices are at College Green. Morrison's was quite a historic hostelry, and for many years was the resort of distinguished visitors to Dublin, among whom may be mentioned the late Charles Stewart Parnell, who made it his headquarters while remaining in the city. The demolition of the great building is being carried out by Messrs. Beckett, and soon the last vestige of the old structure will have disappeared. When this has been accomplished the actual building operations will be commenced, the plans for which are in the hands of Mr. Dick Peddle, partner of Mr. Washington Browne, of Edinburgh, the North British Company's architect, who is also engaged with the arrangements for the work. The company will not require for business purpose the whole of the renovated premises, a portion of which will be let as offices, while on the Nassau-street side a number of handsome shops will be erected. The building will be of stone, and of chaste architectural proportions. The main entrance will be in Dawson-street, at the same place as the old hotel door, and over this an imposing clock tower will rise. On either hand inside there will be a secretary's office and waiting-room, while for the public a large general office will run along the Dawson-street front. There will also be a boardroom, strong room, and typists' room, as well as minor offices of various kinds. It is believed that the palatial structure will be completed and ready for occupation in about a year and a half.

The North Dublin Guardians are about to erect certain new buildings at the Workhouse in Brunswick-street.

Ennis.—The Committee of Management propose to hold an architectural competition for additions and alterations to the Ennis District Lunatic Asylum. An assessor may be appointed, and the designs are to be sent in, under motto, on 1st June next.

Lisbellaw.—The Board of Guardians require tenders for alterations to the workhouse at Lisbellaw. Mr. J. Smith, Ballinasloe, is the architect.

Mullingar.—A proposal to build a new Town Hall is being mooted.

Omagh.—Mr. P. C. Cowan, Chief Engineering Inspector to the Local Government Board, sat in the Courthouse, Omagh, on Wednesday, and commenced an inquiry into the memorial of the Urban Council for a loan of £6,000 for the purpose of acquiring lands on which to build houses for the poor of the town. Mr. M. Lynch, chairman of the Urban Council, and Dr. Stone having been examined, Mr. J. L. Donnelly, C.E., urban surveyor, gave evidence as to the con-

dition of the houses in Brook-street, Fountain-lane, Castle-lane, Kelvin-road, Dromore-road, and the Back Market. He also went into details as to the cost of the scheme. There were to be ten houses at £100 each, seventeen houses at £80 each, and thirty-two houses at £50 each. Mr. James Elliott, J.P., said his opinion was that the accommodation for the working classes was not sufficient. Evidence was then given by several labourers in the employment of the Urban Council, who stated that they required decent houses to live in. The inquiry was adjourned until the 15th March.

Waterford.—The Guardians propose to erect a new disinfecting chamber. Tenders were received on the 6th inst. for certain alterations to the courthouse. Mr. L'Estrange Duffin, Co. Surveyor, is the architect. The Clerk of the District Council was directed to issue advertisements for tenders for the erection of cottages in the district according to the old and new plan of cottage. The following resolution with reference to the non-acceptance of contracts of district councils by persons whose tenders were accepted as being the lowest, was forwarded by the secretary of the Kilkenny County Council:—"That any person sending in the lowest tender not taking up the contract, that his name be recorded, and that if he again acts in a like manner that he be prohibited from taking county contracts for five years."

Very important additions to the Good Shepherd Convent, including a large new chapel, are shortly to be begun. The chapel will be of the triple-nave character. Mr. W. H. Byrne, of Dublin, is the architect, and Mr. Denis W. Morris, also of Dublin, is the surveyor.

St. Mary's Church, Drogheda, has been fitted with the latest improved "Small Tube" hot water heating apparatus by John King, Ltd., engineers, of Liverpool and Donabate.

Mr. Horace Plunkett's Work.—The New York *Mail and Express* of February 16th, in an article on the "Characteristics of our Foreign Girls," says:—"Horace Plunkett's ten years' work in building up home industries in Ireland is beginning to lessen the number of Irish girl immigrants. Home industries are thought by some to be a greater balm for Ireland's woes than Home Rule. With the enlarge opportunities in Erin for earning money in such occupations as poultry-raising, dairying, lace-making, and so on, more and more working girls are able to stay at home."

Ceilings—Plaster ceilings are more fire-resisting than wooden ceilings. Fire insurance companies recognise the fireproof properties of plaster over wood by making a reduction in the premiums where plaster is used for ceilings or partitions. Petura decorative slabs, which have raised modelled surfaces, are useful for forming ceilings where speed, cleanliness, and sanitation is desirable. The use of these slabs entirely dispenses with lathing and the two or three coats of wet plaster. The slabs are made in various sizes and to joint in the centre of the joists, and are readily screwed to the joists. The joints are generally stopped with putty and plaster, and for special work the stopping is done with petura stopping, which enables the whole ceiling to be painted or distempered as soon as it is stopped. These slabs can be sawn similar to wood. There is no dirt or wet in the fixing. These ceilings have a finished surface, look clean, and will keep a good appearance for a long time even without painting. The natural colour is white, but the slabs can be obtained in various tints. Petura slabs are manufactured by the patentee, W. Millar, No. 1 and 3 Arches, Battersea Park Station, London, S.W.

NOTE.—We shall publish, beginning in our next issue, two special articles—one, "The Field-level Book," a practical essay, by James Ferguson, C.E.; the other, "Notes on Stable Planning and Fitting," by R. M. Butler, architect.



Armagh.—ARMAGH, KEADY, AND KINGSCOURT RAILWAY.—At an adjourned quarterly meeting of the Armagh County Council held recently a letter was read from the Armagh Rural District Council in which that body expressed the highest satisfaction at the result of the conference between Mr. John Lonsdale and the directors of the Midland Company with the object of carrying out the proposed line of railway to Kingscourt. A resolution embodying this, and also pledging the Council to oppose the Great Northern Bill by petition, and take such other steps as might be necessary, was enclosed for adoption.

Ballycastle.—A large meeting of the ratepayers of Ballycastle was held in the Courthouse on Thursday to consider the advisability of having the town lighted by electricity. Mr. Daniel M'Kinley presided. The chairman explained the object of the meeting, and stated that Ballycastle was well to the front as regards natural scenery and fine buildings—the worst defect was the want of light, and it was for the purpose of having that defect remedied they had met that evening.

Belfast.—HARBOUR PROJECTS.—Public attention has been drawn lately to the Harbour Board owing to the matters debated at the Board's meetings of the utmost importance to the welfare of the city, and the future development of the port. It has been stated, and great anxiety has been caused by rumours, that Harland and Wolff cannot get suitable land to extend their magnificent establishment. One section of the Board want to develop the County Down side of the river as a distributing centre for imports and exports—in fact, to make new docks on that side of the harbour to accommodate the goods imported and exported by merchants and traders living at Ballymacarrett. It appears that to make the Musgrave Canal and traders' dock at a cost of some £240,000, the loss of interest and up-keep would be enormous. The 1893 Act gives the Harbour Commissioners power to expend something like 1½ millions to develop the harbour and make a new graving dock on the County Down side at an estimated cost of some £260,000 to £300,000, thus showing the powers to expend between £600,000 and £650,000. We understand the board have agreed to call in consulting engineers to assist how best to develop this dock. To satisfy the public mind, now that it is aroused to this subject, there must at least be two independent engineers.

Castleblayney.—This Board met on Wednesday, Mr. Edward M'Donnell presiding. In reference to the proposed improvement to the Fever Hospital water supply, the Local Government Board wrote sanctioning the proposed scheme, and the Clerk was accordingly ordered to get out advertisements for tenders for the work. The Roman Catholic chaplain to the workhouse wrote objecting to the alterations contemplated by the Board, whereby the chapel would be converted into a surgical ward.

Donaghadee.—Mr. E. L. Woods, C.E., town surveyor of Bangor, has, out of twenty-seven competitors, been appointed engineer to carry out the proposed water and sewerage scheme for the town of Donaghadee.

Kerry.—THE PURCHASE OF THE NORTH KERRY RAILWAY.—At the meeting of the Limerick County Council on Saturday, Mr. Coffey, solicitor, mentioned that they had lodged a petition against the bill of the Great Southern and Western Railway Company for the purchase of the North Kerry Railway, but that did not empower them to spend money, and so he had arranged to petition the Lord Lieutenant for the necessary authorisation. Of course they would not spend the money if the companies gave the Council what they asked. A discussion

having taken place, a resolution to ask for time to expend money in opposition to the bill was unanimously adopted.

Kingstown.—The Town Commissioners will on Monday, the 18th inst., consider tenders for 700 yards of concrete paving.

Kilkeel.—The new wall at Kilkeel Harbour is nearing completion, the recent weather being very favourable for building operations.

Omagh.—At the meeting of the Omagh Rural District Council on Saturday a letter was read from the Local Government Board enclosing a copy of a letter received by them from Mr. Henry Owens, one of the Councillors. The letter was in reference to the Beragh water supply, and stated that the people of the village of Beragh did not wish to be saddled with a rate for supplying them with water. In reply to that the Local Government Board wrote that it was they who had the determining of the area of charge. The committee appointed to consider the plans of the new water works at the village of Gortin reported that they had carefully considered the scheme submitted by Mr. Donnelly, the architect, and that it was in excess of the requirements of Gortin. Mr. J. L. Donnelly wrote in reference to the increased amount for the labourers' cottages, and it was decided to send his explanation to the Local Government Board.

Rathdrum.—The Board of Guardians propose to introduce a new water supply for the town of Aghrim, Co. Wicklow.

Shannon Electric Power Scheme.—A meeting was held in Nenagh composed of most of the influential people of the district, who resolved to oppose the scheme to the utmost so far as it affected Lough Derg, and a considerable sum of money was collected for that purpose. The inhabitants living along the shores of the lake and for some distance inland are entirely hostile to it, as it would have very greatly interfered with their supply of fuel, owing to the company wishing to obtain power to lower the levee of the lake to a point which would have seriously impeded the navigation.

Tullamore.—Tullamore municipal boundaries were extended during the week, as the result of an inquiry held at the instance of the County Council.

AN "OVER-RATED" TOWN.

Grays lies low on a big pancake plain, bounded by mud and the River Thames; but, in spite of this, Grays stands high. It exults in the proud eminence of being the highest-rated town in the world.

It has won this pinnacle of lonely splendour by running up the rates while others slept until they have reached the handsome figure of eleven shillings in the pound!

Chiswick used to pose as champion rate-squeezer; but it could only boast of 9s. rd., and Grays has beaten it hollow.

This is how the rts. is made—up:

Urban District Council Rate	5s. 6d.
Poor Rate	4s. 0d.
Water Rate	1s. 6d.

To bring things into true harmony, the price of gas is 4s. 6d. per 1,000, or nearly twice as much as in South London, and now Grays is struggling with an electric lighting scheme.

Grays does not look like a spendthrift; but with a population of only 15,000, it has debts amounting to £55,000.

It has borrowed £42,000 for drainage works, £2,190 for a cemetery, £2,100 for a recreation ground, £3,400 for laying out a little park, £24,000 for street works, and £1,000 for the site of the electric station which is going to light up Grays as it never was lit up.

This is not all. The Grays Urban District Council have in view further loans to the extent of £15,000. The ratepayers are trembling for fear of a further rise, which will secure them as champions of the world for a long innings.

Like London, Grays is struggling with a water question and a housing problem. It hopes to launch out and build houses for its working classes at 8s. 6d. a week rent, and it has already run up a big lawyer's bill by fighting a water company.

THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.

BY BARRY PARKER AND RAYMOND UNWIN.

A Lecture delivered before the Society of Architects, and Published in the Official Magazine of the London Society.

(Continued.)

The Plan.

But I am digressing from the plan, and must return to the living-room which we are designing. There the angle is of somewhat special construction, having several small windows to afford peeps out towards the court and the view, and to give light conveniently placed for anyone reading; and also having cupboards for the display of the client's collection of oriental pottery which is being utilised, somewhat by way of decoration, where the changing lights falling on its bright colourings will give some additional variety to its beauty. The angle is made deep enough for the seats to serve for sofas.

The Living Room.

As meals will be taken in this living-room, a small dais for the purpose is provided in full view of the fire; and, by the client's wish, the recess for this is made by a window recess in the form of a large sunny bay, having fixed seats on three sides of the table. This bay gives us another window facing directly to the best view as well as one to the west, which brings the evening light into the room, while the recess is a great advantage, as it prevents the room being blocked up with the meal table.

Between the angle window where the piano stands and the angle seat is fixed a cabinet, arranged with cupboards, drawers and shelves, to hold music, ladies' work materials, books, and the other oddments that are wanted in the room. Near the door a slight recess is formed for a sideboard; and this end of the room is lighted by a window close by, which opens on to the balcony. In all rooms there is a part by the door where no one willingly sits because of a certain lack of comfort: it is well to keep such part of the room as small as possible.

A Good 'Tip.'

Very often a room may be actually improved by being reduced in width just where the door opens, while the space cut off may be put to much more valuable use. In this case the sheltered south-west balcony, which is obtained by narrowing the two rooms opposite the doors, adds greatly to the amount of open-air life it is possible to enjoy, and makes it easy to have the pleasure of frequently taking meals in the open: the little window by the sideboard is convenient to hand things through for this purpose. A recessed balcony is, in our climate, much more useful than any projecting verandah. It is possible, owing to the extra shelter, to sit in such a balcony two or three times as often as in the verandah with open ends.

The Furniture.

In this room all the important furniture forms part of the scheme: it is thought out and designed with the building. In the treatment of the room advantage is taken of the beams and lintels required for the recesses, and where these are lacking a deep picture rail carrying line with them is adopted, under which the sideboard, cabinet, and windows are arranged to finish, leaving an unbroken frieze above, and giving a sense of order and unity to the whole. This frieze is decorated with a painted suggestion of landscape, but in simpler treatment if white-washed, or tinted with the ceiling, would be light and satisfactory. The lower portion of the walls, under the decorated frieze, is finished in plaster tinted to the required shade by mixing colouring matter with the skimming coat; this forms a good, plain, solid-looking background for either pictures, furniture, or the people who inhabit the room.

Economy.

Where economy is any consideration rooms may be kept as low as possible, giving additional space outwards, which is as valuable as space upwards for an air reservoir, and for all other purposes so much more valuable. This house is 9 ft. 0 in. floor to floor.

(To be continued.)

OUR INTERVIEWS.—No. 3.

MR. JOHN GOOD,

Hon. Secretary, Master Builders' Association.

Mr. John Good is the Honorary Secretary of the Master Builders' Association, and was born in Dublin in 1867, educated in our city, and was apprenticed in '85 to Mr. James P. Pile, a well-known and large city Building Contractor, where he had a large and varied experience. During the last eighteen months of his apprenticeship Mr. Good had charge of the large contract for building the new Military Barracks at Blackhorse Lane, North Circular Road, now known as the Marlborough Barracks. Having completed his term with Mr. Pile, Mr. Good commenced business for himself in 1890, and since that date has been responsible for many large and important buildings in all parts of the city and country, amongst which we might mention the new Asylum Buildings, Mullingar, the Rathmines Town Hall, the Pathological School, Trinity College, and many others. The City Gates at Leeson street Bridge, which formed such an



MR. JOHN GOOD,

Hon. Secretary, Master Builders' Association.

important and attractive feature in the decorations on the occasion of the visit of the late Queen to Dublin in April last, were erected in the extraordinary time of fourteen days.

Year by year the business kept steadily growing, and in '99 had attained such large dimensions that Mr. John Good decided to turn it into a limited liability company, under the title of J. and P. Good, Ltd., taking in his brother, who had for many years been associated with him in building up the business. The firm is to-day one of the largest engaged in the Building Industry in our city.

During 1895 the labour troubles again commenced to assume a serious aspect, and in conjunction with the late Alderman Meade and others the Master Builders' Association was revived, with Mr. John Good as Hon. Secretary. These troubles culminated on the 1st of May, 1896, in one of the largest strikes ever known in Dublin, completely stopping building works for nearly five months. The Master Builders' Association proved equal to the occasion, and succeeded in establishing proper working agreements on a uniform basis with all the trades, a point of considerable importance. Since that the Association has been most active

in all that concerns the interest of its many members, and Mr. John Good continues to act as Honorary Secretary.

In addition to these duties Mr. Good is the Managing Director of the Builders' Accident Insurance of Ireland, Ltd.; a member of the Technical Education Committee of the City of Dublin, and a joint Hon. Secretary of the Dublin Plumbers' Employers' Association.

Mr. Good is an eloquent and thoughtful speaker, and frequently takes part as a visitor in the discussions of the Architectural Association, where his views are always looked forward to with interest. As the indefatigable organiser of the Master Builders' Annual Banquet, the many guests of that Association look upon Mr. Good as an ideal host.

CLONFERT CATHEDRAL.

Amongst the manuscripts preserved in the Royal Irish Academy is a letter dated the 12th of November, 1836, written by the late George Petrie, the celebrated authority on Irish Round Towers and other antiquarian subjects, to Mr. John O'Donovan, in which he says:—"Your letter on the antiquities of Clonfert, with O'Keeffe's excellent drawing of the beautiful doorway of the cathedral, gave me great pleasure. I think your guess at the age of the doorway—10th century—must be very near the truth, but I hope we shall yet get some clue to the exact time of its erection. You do not, however, appear to have looked at the whole of the church with an equally accurate eye, for the choir is certainly of the same age as the doorway, and its east window is quite unique in its way. It tempted me to make a careful drawing of it. I hope you saw it on the inside."

Referring to an ancient tombstone, which was lying flat, embed under two or three feet of earth in a field about five hundred yards from the cathedral, Mr. Petrie says:—

"The inscription excited me much, and I spent two hours in a fruitless attempt to copy it, but the day was unfavourable, as there was no sunshine.

Mr. John O'Donovan had been informed that this inscription had been deciphered by a Mr. Robert Hamilton, who had copied nearly every old inscription in Ireland. Mr. Petrie also refers to a finely preserved fragment of a slab in the cathedral, incised with a beautiful cross of early type, bearing the name Belgian in Irish characters.

During the progress of the work of restoration of Clonfert Cathedral recently, several ancient tombstones, and fragments of carved stone, have been found lying about, some in the Sacristy and, others elsewhere. These included a tombstone with a Latin inscription two hundred years old, one with an English inscription equally old, and another dated 1612, with an inscription in Latin in memory of Richard Callanan. It is interesting to know that the Callanans were formerly the hereditary royal physicians of Connaught. The office of hereditary royal physician existed at one time in the Highlands of Scotland. These tombstones, together with those mentioned by George Petrie,

Amateur Architects—That amateur architects incur financial liabilities was exemplified in a case heard before Sir Horatio Lloyd in the Wrexham County Court. Messrs. Rogers and Son, builders, claimed £15 2s. 9d. for extra work at Vron Church from Mr. Butler, a colliery owner. He was enthusiastic about the new building. He altered the plans to order to create a model church, and he supplied the bricks. The vicar appreciated so much interest by a layman, but he took the precaution of saying that Mr. Butler must be responsible for the extras, and he wrote to the builders to the same effect. Mr. Butler declined the responsibility, but the judge said that by presence and interference he had incurred liability. Judgment was given for the amount claimed, but no costs were allowed. The judge gave it as his opinion that the builders should not have executed the work without a definite contract.

NEW BOOKS.

GLIMPSES OF THE WEST INDIES (Illustrated). By John Todd Rea, Architect. Dublin: Graham and Co., Ltd., Temple Bar. Price 1s.

This is a brightly-written story of an architect's four years' stay in the West Indies. The author was appointed to posts under the War Department successively in nearly all of the Antilles—"Islands that were the Hesperides of all my boyish dreams," as Longfellow says. Mr. Rea's description of them, their inhabitants, black and white; their architecture, climate, and social life, is in pleasant, chatty style, and full of useful information to anyone contemplating a sojourn in the West Indies.

SILICO - CALCAREOUS SANDSTONES. Building Stones from Quartz-sand and Lime. By Ernst Stöffler, Engineer. London: E. and F. N. Spon, Ltd. Price 4s. nett.

This book describes the manufacture of an artificial stone from a mixture of sand and lime, under the influence of moisture. Not only is the whole process clearly outlined, but the machinery used in the manufacture is freely illustrated by twenty-two drawings and five plates. The process seems to be a comparatively simple one. Any kind of clean, firm sand, with the addition of lime, may be utilised in making these carbonate of lime bricks, and the process has been considerably developed by Mr. Schwartz, of Zurich. For many years past the brickworks near Zurich have been successfully making bricks by this process. The stone-supply problem is fast becoming a very real one, and any new process which promises a cheap substitute for stone should be assured of success. Builders in Ireland in particular have suffered much at the hands of the quarry owners, who in turn blame the exactions of their employees for the present unsatisfactory state of things. The suggestion whether such brickworks could not be profitably worked in this country, thereby creating practically a new industry, seems to us to be at least worthy of enquiry.

GRAPHIC STATICS, Volume 2. By G. F. Charnock, Assoc. M. Inst. C.E. Manchester: J. Halden and Co.

The author of this treatise is the head of the Engineering Department of the Bradford Technical College, and as such has special opportunity for becoming acquainted with the wants of the student. The particular value of this book lies in the clearness and extent of its illustrations. They are all illustrative of the real practical application of graphic methods, and, as the author himself remarks, "A knowledge of graphic statics cannot be acquired by mere reading, and freehand sketching of diagrams, unless drawn accurately to scale, cannot be too strongly deprecated." The truth of these remarks is perfectly obvious, and the author certainly cannot be accused of not fully and lucidly detailing his subject. We can recommend this book to students in particular.



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THE "REVISED" ESTIMATES.

We have good authority for stating that at Tuesday's meeting of the Electric Lighting Committee, the estimates of the various contractors who have consented to tender for the erection of a power station at the Pigeon House in accordance with Mr. Hammond's amended specifications, were under consideration. The result, so far as we have been able to ascertain, was scarcely of a nature which will prove satisfactory to the working-men of Dublin. It will be remembered that when the first series of tenders, prepared in accordance with Mr. Hammond's original specification, were opened, it was found that their amounts were, in every case, far in excess of the total which that engineer had fixed as the probable full cost of the power station. As a result, it was decided to ask Mr. Hammond to cut down his original specification, with the object of enabling those members of the Corporation—such as Councillors Pile and Jones—who had been most strenuous in pressing his scheme on the Corporation for acceptance, to justify their action. Mr. Hammond, accordingly, reduced the total of his first requirements with a vengeance. As a consequence, we understand, the following remarkable reductions were made in the estimates first laid before the Electric Lighting Committee in the new set of tenders submitted on Tuesday. The figures to be contrasted in each case are as follows:—

	Original	Amended
J. and P. Good	£47,500	£32,671 6 7
Pearson	52,900	46,926 5 2
H. and J. Martin.....	47,000	31,668 16 10
W. Stevens, Belfast	41,674	29,051 10 9

It appears that the Electric Lighting Committee has decided to recommend the Council to accept the reduced tender of Messrs. Stewart, of Belfast, although it, even at its reduced figure, is more than £9,000 in excess of Mr. Hammond's original specification. We understand that even this sorry result has only been arrived at by cutting out of the specification almost everything essential to the construction of a properly-equipped power station. The alterations which were made are worthy of specific description, but need not be set forth to-day. It will suffice to say that they were of a nature which left the projected power station little more than a bare quadrangular erection with a roof. It remains to be seen whether the newly-constituted Municipal Council will further commit itself to a scheme which has proved itself so unreliable as Mr. Hammond's undoubtedly has. —*Evening Herald*.

LAW CASES.

WHERE DOES A BUILDING BEGIN?

An exceedingly novel point under the Workmen's Compensation Act was raised before Judge Parry at Manchester County Court. Christopher McGrath, while bricksetting on a warehouse that was being erected by Messrs. Neill and Sons, was thrown from the second story to the basement by a plank suddenly tilting up. He therefore, claimed damages for injuries sustained. The question at issue was one as to whether the height of the building should be calculated from the street level or from the level of the cellar. It was argued that if the street level were to be taken the 30ft. required by the Act would not be obtained, and the action could not succeed. Judge Parry expressed his opinion that the only way of measuring was to begin at the bottom, of the brick, inasmuch as a builder began at the bottom, whether it was above or below the street level. As the point, however, was a very important one, he would reserve his decision.

CORRESPONDENCE.

THE MAIN DRAINAGE SCHEME AND THE BRIDGES CONTROVERSY.

LETTER FROM DR. BINDON STONEY, C.E.

TO THE EDITOR OF THE IRISH BUILDER.

DEAR SIR,—In reply to your enquiry, I was not aware Gandon prepared any designs for rebuilding Carlisle Bridge.

Many years since I heard the representatives of the late Mr. Cockburn, a well-known Dublin builder, had some of Gandon's papers in their possession. I think the late Mr. Parke Neville (city engineer) at one time contemplated constructing a syphon for the main drainage under the Liffey above Carlisle Bridge. The new piers of the widened bridge go down to the rock, and no special provision seemed necessary.

Perhaps Mr. Byrne referred to the two circular culverts provided for the first main drainage scheme, one in each abutment of Grattan Bridge, and which may be seen at any good low water. These culverts made it necessary to alter my first design for widening and lowering Essex Bridge, which had five symmetrical arches, corresponding in span to those of Semple's old bridge. They have very materially injured the architectural effect of the first design, and leave the present bridge in an unfinished condition.

The appearance of Grattan Bridge would be much improved, even if Mr. Neville's intention of widening the quays on either side of the river were carried out by bringing forward the quay wall to agree with the fronts of the new abutments, the elevations of which were left unfinished with that intention—Yours faithfully,

B. B. STONEY,
14, Elgin-road, Dublin.

[NOTE.—We have just received a most courteous communication from Mr. Catterson Smyth, Secretary of the Royal Hibernian Academy, conveying to us the permission of the President and Council to photograph for reproduction Gandon's original water colour design for Carlisle Bridge. We hope shortly to present our readers with this interesting memento of one of the greatest architects of the Georgian era. We shall also publish Semple's design for Essex Bridge.]

PEMBROKE TOWNSHIP BILL.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—As a ratepayer of this district, I was present at the meeting in Ballsbridge, and regret extremely that owing to the inconvenience of the hour so few of my fellow-ratepayers attended the meeting, as the matters discussed were of the utmost importance to this flourishing township—flourishing despite its administration.

With the matters dealt with in the proposed bill I entirely disagree, in so far as it becomes necessary to promote the bill in Parliament for the purpose of raising the moneys requisite. Regarding the widening of Ball's Bridge, this is a matter of the utmost importance, not only to the Pembroke township, but to the city at large, which yearly receives considerable sums of money from the influx of visitors and buyers, who flock to our great National Show; and at those periods the bridge is not only totally inadequate, but extremely dangerous. At the same time, I think that the city that receives so much should give something towards this much-needed improvement, and not throw it all upon our bankrupt township and the Tramway Company. Whilst advocating the improvements, I distinctly object to it being carried out at the cost mentioned—viz., £12,000. I have not seen the proposed plans, and, consequently cannot say how much is allocated for ornament, etc., but from my own experience I should certainly consider that for a considerably reduced sum a substantial plain bridge which would meet all the requirements could be erected. As regards the electric lighting, and the amount to be expended thereon, I would be glad to know if the amount asked for will exhaust the demand and improve the light, than which nothing could be worse.

"A Disgusted Ratepayer" voiced our indignation at the supply meted out to us. I would suggest that before any more money be laid out in "improving" the electric lighting, that the commissioners get an independent report on the system and its possibilities. From what I have read of "C. E.'s" *expose* of the city electric lighting, I should think he would be the man (if he would reveal himself) to report on, or, at all events, criticise the township system of electric lighting. Regarding the financial position, I will only say that, while deploring it, I think the sounder way to meet the difficulty would be to increase our rates, spreading the same over a number of years. This, it appears to me, would simplify matters, and I am aware that a number of my co-ratepayers view the matter in the same light. Could not this be done?—Yours, etc.

J. H. RYAN, M.Inst. C.E.,
35 Waterloo-road.

COUNTRY HOUSES—SMALL AND QUIET.

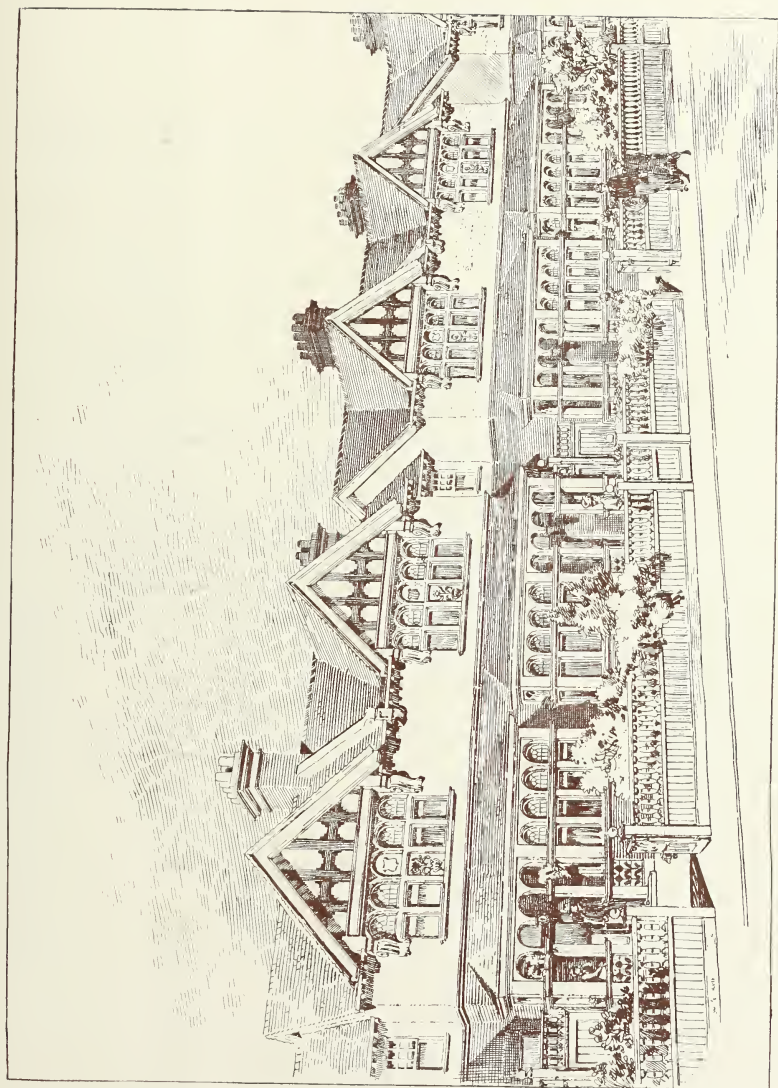
Country suggests quietude, and Mr. M. H. Baillie Scott in an admirable address before the Liverpool Architectural Society, laid great stress on the need for so constructing a country house that, as far as the architect is concerned, there shall be a guarantee to the inmates of something like domestic peace, and possibly of individual seclusion. His subject was "The Planning of Small Country Houses," but his opening remarks were certainly capable of a wider application. As he said, we most of us live in small houses and depend for our daily comfort and well-being, to no small extent, on the amount of skill displayed in their design, and yet in the majority of cases the small house presents but little evidence of careful planning—a bay window and some leaded glass in the front door are held to be more than sufficient substitutes for solid and less obvious advantages.

Let us consider for a moment, he continued, a practical example, and let us imagine a man who, in the language of the advertisements, may be described as a tired brain-worker, seated in his study in the throes of modern fiction. Over his head the children of his family are beating a tattoo, to which the chandelier jumps in unison. From the kitchen unutterable odours exude and rancorous voices engage in laughter or wrangle. Let us follow him to the dining-room, which is apparently all table and sideboard, or edge our way past the hat-stand and so into the drawing-room, where the milking-stools and painted tambourines are, and where occasional tables hardly seem to justify even such a limited demand on their services as their name implies. A few simple rules suggest themselves at once as remedies to these defects in his surroundings. The children's room need not be arranged to come over the study, the floors generally should be deafened, and fairly solid walls should divide the kitchen premises. Then the kitchen should have good ventilation, and, finally, most of the furniture should be ejected. As a contrast to such a house and as a guide to better things, Mr. Baillie Scott quoted a few lines from the "Eagle's Nest," which suggest a somewhat different picture:—"And in actual life let me assure you in conclusion the first wisdom of calm is to plan and resolve to labour for the comfort and beauty of a house, such as, if we could obtain it, we would quit no more. Not a compartment of a model lodging-house, not the number so-and-so of Paradise Row, but a cottage all of our own, with its little garden, its pleasant view, its surrounding fields, its neighbouring stream, its healthy air and clean kitchen, parlour and bedrooms."

OUR ILLUSTRATIONS.

VILLAS AT CHINGFORD.

The view which we publish is from the architect's drawing, and the accompanying plan explains the general character of the design. A feature of the plan is the successful attempt to do without the seemingly inevitable return building, which so often darkens and renders gloomy the back rooms of our suburban houses.

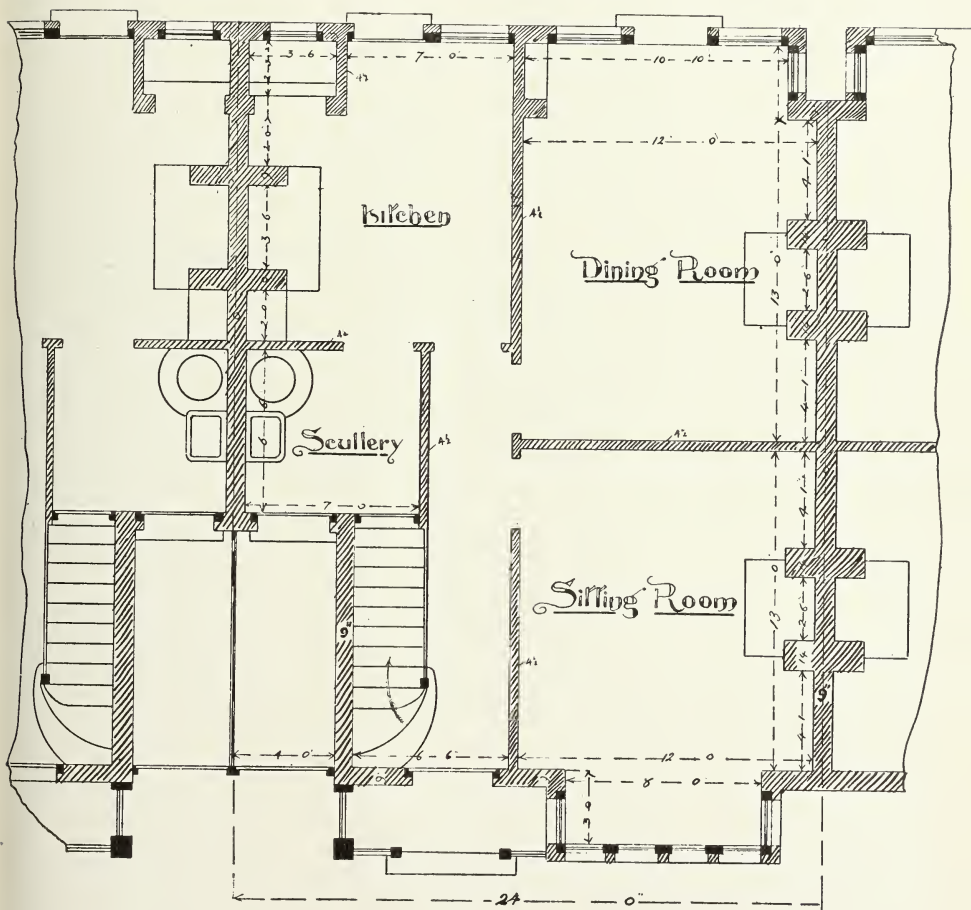


VILLAS AT CHINGFORD.

MR. W. I. CHAMBERS, SAVOY HOUSE, STRAND, ARCHT.

1914-1915

1914-1915



HOUSES AT CHINGFORD.--THE GROUND PLAN.

MR. W. J. CHAMBERS, ARCHITECT.

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NOTICE.

The subscription to the "*Irish Builder*" is now reduced to 4/4 per annum (postage paid). Subscriptions are payable in advance, and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street, Dublin.

VOL XLIII.

MARCH 13, 1901.

No. 988.

SOME ASPECTS OF THE LABOUR QUESTION AS APPLIED TO THE BUILDING INDUSTRY.*

The Labour Question.

All have doubtless noticed that for many months past our newspapers and our monthly magazines have been full of the rapid progress which characterised the century just ended, but while the sum of the progress is vast, its analysis is deeply interesting, revealing, as it does, that during the last decade the rate has not been as high as that of its predecessor, and when viewed in the light of the progress made by other nations during the same period, we find that while we have improved, we have not improved as rapidly as other nations have done; not only so, but we have been outstepped by our rivals, and are no longer the centre of the great world of commerce. Commerce is the great bulwark of our nation, and seeing others beating us has set all thinking minds to work to solve its mysteries, and to tell us where is our deficiency, so that we may thereby endeavour to heal the breach and hold that which our forefathers have built up and handed down to us.

Lord Rosbery's Prophecy.

Speaking a short time ago to a large assembly, representing the commerce of the United Kingdom, Lord Rosbery stated "that the war we had to fear in the future was the war of trade," and, further, "that education and eternal vigilance must guide us in fighting for commercial supremacy."

British Innovations.

This vigilance has not been as marked in the past as it might have been. During the last few years our large commercial centres have to some extent thrown aside their prejudices and sent representatives to the Continent and to America to study and report on their methods, and as a result, I am glad to say, that we are awakening to the national and vital importance of this matter. These reports tell us that our system and our methods have become antiquated, and that reformation must start from the very bottom, and that if we are to succeed we must train and educate more thoroughly, more efficiently, the mechanic who produces the work, on whom the responsibility really rests. All admit that we have excellent material to work on, but all know equally well that inferior material, properly adapted and equipped, will often yield better results both in quality and quantity than the better material indifferently adapted. **How we have been Beaten.**

It is true that we have only been beaten in a few departments of our commerce. But those who have examined and

studied the matter tell us that the same methods that have beaten us in these departments are being applied to other departments, and will doubtless yield similar results. In constructive ironwork the American has invaded the precincts of our own city, and with his skilled and trained mechanic erected work in much less time and for less money than we could have done it. The wood block flooring industry, which is now a large one, and of which we see so much in all our important buildings, is almost entirely laid by Germans. Tiling—particularly Mosaic work—is largely in the hands of Germans and Italians. Then, again, look at the large amount of manufactured joinery that is put on our market by the energetic Swede. One might instance many examples, doubtless all small atoms in the great mass of trade, but beware of small beginnings, with real and steady undergrowth; we may attempt to blight them by appealing cries of "Support Irish Manufacture." Such may to some extent check temporarily, but what the public to-day want is a good article at the cheapest price, quite irrespective of whether it be manufactured by a German, a Jew, or an American, and the nation that meets these conditions best will get the trade.

What can be Done.

It therefore follows that the first and most important duty of those responsible in each of the many departments that go to make up the trade or commerce in every city, or town, or village in our Empire, and of every true patriot, is to be ever watchful in this day of rapid changes, and to see that the trade for which they are responsible is conducted on the most modern and best known lines, such as will defy the test of competition. But however well and thoroughly this may be done, unless it is met in the same spirit by the employees—the skilled and unskilled alike—it must fail. All must pull together to make the pull effective; the most unskilled must be made to feel his responsibility, and that his part is a necessary part to the success of the whole. Following up then what I have said with regard to the duty and responsibility of those connected with our trade departments, I purpose now taking a brief view of one or two matters in the building industry that are, I would venture to say, unknown, except to those directly interested, and which are of more than ordinary importance to all citizens.

In the Good Old Days.

In the so-called good old days of the building industry, the customs were very different from to-day. Then when a firm established a reputation it got as much work as it could do at its own price; to-day, while an evil reputation will not assist, a good one will not get the work unless the price is a low one—in fact, the lowest one. Your president, in his able inaugural address, foreshadowed a Utopian time for builders, which he was good enough to hope would soon be established, in which an architect will select a builder and give him a fair price. The amount of work to-day not obtained by competition would, I should think, on an average be about one per cent., and the amount in money of work so done in proportion to that done by competition in any year would be represented by a decimal; and when one realises that one of our most important public departments now requires competition in all works exceeding £5 in value, I am afraid we must prepare for an age of keen competition before we can hope for a change to this Utopian ideal. Builders in Dublin are frequently, in fact, almost daily called upon to compete with those from all parts of our Isle, and they are also called upon to compete with firms from England and Scotland, some of those from England and Scotland being branch departments of Continental and other houses. It is clear, therefore, that unless our conditions are such that we can produce on something like equal terms, it naturally follows that we must be beaten. The loss is first the employers', then the employees', and finally our country's, which he and they support in paying its taxes, and in consuming its produce.

Continental Specialties.

It is only fair to say that with us this competition from agents of Continental firms is at present largely confined to specialties. It was so until recent years in other industries, and to-day we find them competing for and taking the whole

*A Paper read before the Architectural Association of Ireland, by Mr. JOHN GOOD, Hon. Secretary of the Master Builders' Association.

fabric; to-morrow the case will be ours, so that it is not in any sense a remote contingency, or one that should not have our careful consideration. The apprentice of to-day will doubtless have to meet it in his trade by-and-by, if happily not here elsewhere, and it is therefore our duty to see that he is so trained that he will be able to fulfil his part with credit.

The building industry in Dublin.

The building industry in our city is a large one, comprising upwards of 7,000 hands. It is not alone, therefore, of interest, but of importance, to inquire into the means whereby its ranks are supplied. Is the basis of supply equal to the demand? Are its ancient methods adapted to the altered circumstances of life and work? Such questions as these naturally occur to us as we consider this matter.

How the Building Trades are Recruited.

The building trades generally are recruited from apprentices indentured and unindentured, and improvers. The unindentured apprentice is bound with the usual agreement to a builder, a tradesman, or a society, either of whom undertake to teach, or as it is called, to "to give" the apprentice his trade. In the unindentured apprentice system there is only a mutual agreement, which is liable to be broken on either side at option. The improver is one who picks up his trade here and there wherever he can find employment.

The Apprentice System.

The indentured apprentice system—which is a very ancient one—has been found to yield the best results. Masters and men are agreed on this point, consequently modern agreements and legislation have been in its favour, and against the unindentured and improver systems. In bygone days the man who attempted to practice a craft without having graduated in the guild was summarily and sternly dealt with by law, for the guild had a legal status; it had power, but it had its responsibilities to maintain a standard of good workmen. The ancient guilds have almost entirely passed away, and their place has been taken by the modern trade union, which has not the power nor apparently the desire to keep up these ancient traditions, and the relaxing of these traditions has not been without its effect on the high standard of the tradesman.

The arts and system of most trades are intricate, and require more than ordinary attention and perseverance to master their details, and though our indentured system is capable of an immense improvement, both in instruction, inspection, and examination, it is at present the best available training school. Under it the old custom of responsibility for giving the trade is maintained, though not always carried out as it might be.

The Conditions of Apprenticeship.

The conditions of apprenticeship vary considerably in the different trades. In the carpenters' and joiners' the apprentices are principally bound to the employers, and there is no limit in the number of apprentices that may be taken.

Carpenters and joiners form one of the largest trades engaged in the building industry, and according to the last census they numbered 2,052 in our city. Apprentices to this trade may be taken by either the employer or the members of the trade. Unfortunately there is no registration whatever of the apprentices. But in order to get the information necessary for our purpose I applied to seven of the largest firms engaged in the building industry in our city to supply me with the number of journeymen, improvers, and apprentices actually employed by them, and through their kindness I have been able to compile from their returns the averages of apprentices and improvers in relation to the number of carpenters and joiners employed.

These may be relied on as erring, if at all, on the side of giving a higher average than exists, in all probability, for the indentured apprentice will generally be placed by those who have his interests at heart in establishments where he will get the most general knowledge and best training, conditions which will be naturally best fulfilled by the larger employers. The fees charged by such employers are mostly paid from charitable bequests, the trustees of which require that the boys so aided shall be placed with well-known firms. And, further, it will be found that the objection to taking

apprentices (which I regret exists to a considerable extent amongst employers) is less marked amongst the larger employers.

The same reason which prompted the guardian in placing the apprentice will doubtless guide the improver, and we may, therefore, assume that he will be met with more frequently in the large employments, and that his average is also thereby unduly inflated.

A few Facts and Figures.—The Carpenters.

However, basing our investigations on these figures, we find that the number of carpenters employed by these seven firms numbered 400, the indentured apprentices 61, and the improvers 30, which gives an average of 15.3 per cent. of apprentices, and 7.5 per cent. of improvers, and both together of 22.8 per cent. of the number of carpenters employed.

To keep the number of workmen at a uniform strength in a comparatively long-lived trade, such as the branch under our consideration, the relation of the number of apprentices and improvers to the tradesmen should be 20 per cent., or one to five. Possibly this may appear as excessive to some, so I will briefly explain how it is arrived at. Assume that an apprentice be thoroughly skilled in his trade at 23 years of age, and that the average length of life be 63 years, which leaves 40 working years, it follows then that in every 10 years we lose 25 per cent. of this number, consequently we must train 25 per cent. of apprentices in every 10 years, or 20 per cent. in 8 years, which is the time a boy starting at 15 years of age will take to reach the efficiency mentioned.

The Trades are close Boroughs.

It is a well-known fact that those wishing to follow the trade in country parts come, to the city to be thoroughly trained, and when their time is complete they return home; and others, after receiving their trade, follow other occupations, while more travel to distant places for information. Five per cent. would not be excessive to meet this contingency, so that a proportion of 1 to 4, or 25 per cent., would be found to be necessary, that is assuming the demand to be a stationary one, but such a condition is impossible.

Let us, therefore, provide for an increased trade, and to meet that increased demand with a supply of our own countrymen, which still further reduce our ratio to, say, one apprentice to three tradesmen, which would bring apprentices and improvers to 33.33 per cent. of the number of carpenters, and instead of which we have only 22.8 per cent.

The Bricklayers.

The second largest skilled branch of the building industry is that of the brick and stonemasons. I might mention that in other places these form separate trades, but in our Isle stone was very largely used until comparatively recent years, and owing to the rapidity with which work has now to be erected, and for other reasons, stone has to give way to the modern brick, with the result that the city apprentice of to-day has a limited opportunity of obtaining the experience in the art of stone-laying necessary to make him thoroughly competent in that branch of his trade. So I fear that with us for these reasons that the trade will in the process of time be divided.

The apprentices and the improvers in the branch are entirely in the hands of the tradesman, and under the control of the local society. The employers have not and cannot take an apprentice.

An apprentice to the brick and stone-laying trade must be the son of a member of this particular trade. Under some circumstances the society may relax this rule, and accept a boy whose father did not happen to be a bricklayer, on his paying a £30 fee, half of which goes to the man he is bound to and half to the society.

There are here two very important points to which I would like to draw attention in connection with this trade—the apprentices being in the hands of the tradesmen, and the limitation of apprentices to families, or a supply based on hereditary principles.

The Anomalies of the System.

Under the conditions of employment in our city it is exceptional for a bricklayer to remain long on one work. Take for instance a building taking twelve months to complete.

At stages it will be pushed rapidly, and a large number will be engaged, then a delay will occur, and most of these men will be stopped awaiting the setting and fixing of some other work before further progress can be made, which may occur at several stages, so that there is a constant changing of the workmen. Carrying these circumstances in your mind, take the case of a bricklayer with an apprentice. Under his indenture the tradesman is bound to give that boy his trade thoroughly. When he applies to a foreman for employment he gets it, but not for his apprentice, and probably in not one place in five, where he could get employment himself, would his apprentice be taken, for the reason that the work would be of such a character that an apprentice would be of no use at it, so perforce the tradesman is compelled to separate from his apprentice, and the apprentice is thrown on his own resources to get employment where he can and how he can, and learn his trade as best he can. Just picture his condition during the first year of his apprenticeship. He practically knows nothing of his trade, and applies for employment. Immediately the foreman sees that he knows practically nothing of his trade, and that he is only in the way, he is dismissed, and probably after endeavouring for another week to get employment, he succeeds, only to meet with the same fate. Twelve months of such a life would have, to my mind, a very injurious effect on the boy's moral condition, without making any material difference in his knowledge of his trade.

Who teaches the Apprentice?

There are cases in which a tradesman has an opportunity of properly teaching his apprentices, such as in sub-contract work, and in exceptional cases, where he is not subject to the conditions I have mentioned; but these opportunities occur in comparatively few instances, and I am strongly of opinion that no person should be permitted to take an apprentice unless he can show that he has the opportunity of giving him his trade properly, and can give him constant employment with a variety of work during the term of his apprenticeship.

Now let us briefly consider the other point—that of the hereditary or a "caste" system of trades. One would scarcely have thought of the existence of such a system in this our enlightened twentieth century, when the spirit of democracy is so rampant, particularly amongst the avowed supporters of this principle. Nature has endowed us all with talents—some more and some less, some more suitable to some occupations than others. But quite irrespective of the richest endowments of nature, a boy in our city, is not permitted to follow that for which nature fitted and endowed him, because he did not happen to be the son of a bricklayer. Such a condition is so opposed to every modern idea that one wonders what can be said in its favour, and knowing this, the supporters of this rule thought it well to embody the alternative of a £30 premium admission, subject to the approval of the society. What unskilled workman, or even tradesman could afford to pay this premium for, as we have seen, the mere permission of his son to learn this trade, and then support him during the unremunerative years of his apprenticeship? No, it was clearly never intended that this alternative to the "caste" system should be of general use, but only to meet exceptional cases, and that the hereditary principle should be the custom and rule for admitting apprentices.

1,200 Bricklayers: 34 Apprentices.

The number of bricklayers and stonemasons in our city is about 1,200. Of these 1,060 are members of the local society, the secretary of which has very kindly informed me that the total number of apprentices to this trade in our city is 34 apprentices and 11 improvers; and applying the same rule as we applied to the carpenters, we find that the total per cent. of apprentices is 3.2 per cent., and of improvers 1 per cent., or a total of 4.2 per cent., i.e., less than one apprentice and improver to every 24 bricklayers, instead of a ratio of one to three or 33.33 per cent., as we concluded was necessary to keep the strength of the trade in our city in a healthy and efficient state.

The plastering trade stands third in the list of trades engaged in the building industry in our city. It ought to be

a much larger trade than it now is. A considerable part of the better class of work on which a large number of hands might be profitably engaged is imported, which until recently, was unavoidable. The reasons which led to this unfortunate state are doubtless many and interesting, and show that trade is fickle, and that what often appears to be in the interest of the tradesman is in reality a suicidal policy.

The Plasterers.

The apprentices in this branch, as in the last, are in the hands of the tradesman. Under the control of the local society the employers have not and cannot take apprentices.

The apprentices must be the sons of members of the local society, and no improvers are allowed. This, you will notice, is even more exclusive than any we have considered, as by no means can a boy who is not the son of a member join the plastering trade.

Owing to the divided nature of the trade at present in our city, it is difficult to get exact figures, but the number of plasterers is approximately about 400, and the number of apprentices is about 100, or an average of 25 per cent. This, you will observe, is 8.3 per cent. below what we considered was necessary to keep the trade in an efficient condition.

The Stonecutters.

The stonecutting trade, which forms a large part of the building industry, is a somewhat scattered one. The local men dress the imported stones, such as Portland, Bath, and sandstones, and small quantities of our own stones, such as granite and limestone; the bulk of other work is done in local districts, such as Ballyknocken, Glencree, and Stepside, etc., for granite; Skerries, Ardracran, Ross, Tullamore, etc., etc., for limestone. The stone is there quarried and dressed and delivered in the city ready for fixing, consequently this trade is not as large in number (in our city) as one might expect.

The rule with regard to apprentices is a strong one, and reads as follows:—"That no boy be allowed to be apprenticed to the stonecutting unless the son of a stonecutter; but that any lodge may apprentice a boy not the son of a stonecutter under extreme circumstances, after getting the sanction of the members of the Union." The society, or union, which issues this rule is a large one, with branches in all the important stone-producing districts of our Isle, south of Newry.

The number of stonecutters in our city is about 200, while the number of apprentices according to the only return available, shows an average of 19 per cent., instead of 33.33 per cent.

The Defects of the System.

We have now briefly reviewed the conditions regulating the supply to the principal trades engaged in the building industry working. Let us briefly abstract them:—

Carpenters and Joiners	22.8	per cent.
Bricklayers and Stonemasons	4.2	" "
Plasterers	25	" "
Stonecutters	19	" "
	47.1	

Average 17.75

This gives us an average relation of apprentices and improvers to tradesmen of 17.75 per cent., as against 33.33 per cent., or 680, where we should have 1,230, a deficiency of 600. Truly an appalling figure.

The Causes

Two causes have apparently led to this result. In the carpentry trade the employers have had a free hand in the taking of apprentices, yet the average is only 22.8 per cent. There is no scarcity of applicants, so there must be some reason for it. Is it the amount of fees charged, or the scarcity of the wherewithal to pay the fees, or the apathy of the employers? Well, I believe it is all three combined, and the last is not the least, I am sorry to add. In the other three trades, to which we have already referred, where the apprentices are in the hands of the trades, we find the supply to be 16 per cent., or a deficiency of 17.33 per cent.

What is necessary for Efficiency.

These figures make bare the fact that these systems of supply which we trusted for keeping these important trades

in a state of thorough efficiency, can no longer be relied on. We are not training sufficient to fill the gap which the hand of time is making in the ranks of our trades, so tradesmen come from elsewhere to fill these positions, while hundreds, if not thousands, of able and unskilled hands are to be found in all quarters of our land trying to get an existence on the wretched wages at which such labour is valued, while hundreds more are forced to emigrate—men who, if properly trained in some of our trades, would doubtless have done credit to themselves and their trade at home, a condition which one would think would not for an hour be permitted to exist in any civilised land.

Why the existing system must be altered.

All will doubtless admit that such a system should be altered. But in what direction is it to be altered? Suppose we eliminate the "caste" system referred to, and permit employers and men to take apprentices indiscriminately, will it increase the supply sufficiently? Well, we have had such a condition in existence for years in the carpentry trade, and we find a deficiency of over 10 per cent in that trade alone. However, that would be an enormous increase on the 29 per cent. deficiency as existing in the bricklaying trade.

These surprising facts are not alone true of Dublin. In London we read that a special sub-committee was appointed in 1899 by the County Council to inquire into the educational requirements of the building trade in the metropolis, and in the course of the evidence, it was pointed out that in the year '95 there were only 80 apprentices amongst 12,000 tradesmen. That is one apprentice to every 150 workmen, a wholly inadequate supply. Little wonder, then, that so many foreigners are now to be found in our large cities. Such a condition courts their acquaintance. It is clear, therefore, that the matter is not by any means a local one, but of National importance.

The Theoretical Side.

We have now dealt with the condition governing the supply to our trades, and the means by which the practical side of the trade is learned; but what of the theoretical side? Great stress is laid on the importance of the thorough theoretical training of the young by our Continental rivals. It is evident we want not alone an adequate supply, but a supply of thoroughly-trained and skilled hands, guided by a highly-cultured brain, for never were thinking men more necessary than to-day—*i.e.*, men who have had not only a sound primary education, but who are thoroughly educated in their work. Employers know that such men are very much the exception. Why is this so? Partly because of the fact of the means of obtaining this education not being available. Even to-day a bricklayer, for instance, is without the means of getting a thorough theoretical training in his trade in our city. The same is true of other trades, but even if it were available to-morrow, how many would take advantage of it? In this lies our weakness, as there does not seem to be a desire through our apprentices to take advantage of the opportunities offered. Writing to me on this subject some days ago, the secretary of one of our schools said that "He was strongly of opinion that no real success will be attained by any trade classes held in a technical school unless they are held in connection with, and with the support of, the trades themselves. Unless boys are made feel by their employers and fellow-workmen that there is something to be gained by attending classes, those who attend will be the exception, and not the rule."

The object of this technical training is to supplement the practical training obtained on the building or workshop, and where the latter is deficient in either theory or practice, to step in, and so endeavour to make the apprentice or tradesman thorough in all departments of his trade. This seems such a useful purpose that one would have thought that it would have been eagerly availed of; but not so, unfortunately. To appreciate its importance requires, I fear, a standard of education—a power of application and concentration that is not generally possessed by those available for apprenticeship, and as a result those taking advantage of it will for many years to come be the exception.

Practical Training at Home and Abroad.

Long periods of practical training has been the acknow-

ledged system of training our trades for, one might say, centuries past. Our Continental tradesmen are not so trained. The total period of actual apprenticeship is about the same, but is divided into two parts—school training, which embodies both theoretical and the higher practical branches, not unusually met with during apprenticeship, and the ordinary practical training of the workshop or building. The days and hours devoted to both are clearly laid down, and also the courses to be followed. The apprentice is examined at stages, and his work is inspected and carefully looked after. Everything appears to be focused into making each individual a success, as if it were a matter of vital importance to his country. Now, contrast our apprentice in his theoretical training. How many masters or tradesmen to-day know or care whether their apprentices get any theoretical training? They tell one that what has been the good old custom for centuries is the proper system, and no new-fangled fads for them.

Is Compulsion Practicable?

For some years past I have tried the compulsory view, seeing the voluntary desire to be almost nil, and have included in the indenture of a number of apprentices a clause making attendance at a technical school in certain subjects for a definite time a condition necessary, but whether it is owing to the fact of its not being general amongst apprentices, or otherwise, there is evidently no desire to fulfil it, except under compulsion—the chief reason being that a boy, having worked from 6.30 to 5.30—which means that he leaves home at 6 a.m. and gets back at 6 p.m.—thinks, and doubtless feels, that he has done enough for that day, and has no desire to worry his brain with problems, which is not unnatural.

It is, however, too early to judge of the systems proposed for the technical training of our trades, for with us, as you know, it is only commencing; but I have no hesitation in saying that I have no faith in any system of training which leaves it optional with the student as to what subjects he is to take up (if any) during his course, and this appears to me to be the line on which we are hoping to succeed in the so-called thorough training of our apprentices in the theoretical portions of their trade to-day.

A Question of State Intervention, and Control.

Theoretical instruction and practical training in apprenticeship are so interwoven and necessary the one to the other, that they should be taken together, and under one control, to be successful; divided responsibility in a matter of this nature is undesirable. This principle is a wise and necessary one, even though its acceptance means a condemnation of our own system; but how it is to be put into practice is a little difficult, and opens up a larger question than I could hope to deal with here. I might mention that on the Continent they have the trade school, in which there is given a thoroughly practical and theoretical training, and so complete is their system that they turn out very skilled and competent tradesmen. However, such a system would not suit our circumstances, and it appears to me that a matter of such vital importance as supplying the proper education and training of apprentices to our trades, not the building trade alone, but of all trades, should be in the hands of a public or Government department. A qualifying examination for admission to the trades should be held periodically in connection with our primary schools, for those desirous of joining the trades; the successful boys should then be transferred to a continuation school, where they would get a scientific and technical training of, say, a two years' course before being apprenticed. Then at 15 years of age let them be apprenticed, and compulsorily placed by the department in employments. The course of training in these employments to be laid down, and the theoretical and higher practical work to be taught concurrently at the district technical schools, on days as appointed, under a thorough and systematic supervision by the department, a record of the work as done to be kept, periodic examinations and demonstrations in the different trades to be established, and every inducement offered to encourage and cultivate all that is in the interest of the apprentice, a final examination to be passed by the apprentice on the completion of his term. A system

on some such lines would elevate our trades, and put our tradesman in that position which he ought to occupy.

According to our present methods we assist in giving a sound education to the rising generations of our working classes—no doubt a very laudable object—but having done this, we then throw them on their own resources without giving the smallest assistance to them to so apply that education that they can turn it to the best advantage, with the result that if one advertises to-day for a junior clerk in our city, the number of applicants may be reckoned by hundreds—particularly if the salary is a small one. The training received is such that this is really what the modern school boy is most fitted for when we have done what we call our duty to him. We fit him for a position of respectable penury, where his pay is exceedingly small, where the competition is painfully keen, and where his chance of success is a remote one. This has always appeared to me as a terrible blot in our system, and contrasts most unfavourably with what is done by our Continental rivals. They educate thoroughly; they assist in adapting that education and training to whatever trade or profession is most suitable to his talents and position, and having thoroughly trained, educated, and fitted him in that trade or profession they then leave him in a position to earn a livelihood in that position or calling for which nature best adapted him.

All this will, I fervently hope, be amended in the near future through the instrumentality of our new Department of Technical Instruction, which has already, in a comparatively short space of time, spread itself to work in all parts of our Isle, for which we Irishmen owe a debt of gratitude to one whose name is known and respected in every village by all creeds throughout our land. I mean, of course, the Right Hon. Horace Plunket. The task which he and his Department have set themselves to accomplish is a huge one, full of difficulties and perplexities, hampered by ignorance and want of thriftiness, the overcoming of which can only be accomplished by slow methods and the benefits reaped by future generations.

OBITUARY.

MR. THOMAS FEE, LONGFORD.

The news of the death of Mr. Thomas Fee, of Longford, the well-known building contractor and merchant, will be heard with regret by all who knew him. Genial and kindly, he was liked by all. An enterprising, hard-working man, of the strictest integrity, he had built up a business that was a credit to himself and the town of Longford. His fine joinery shops, modern plant, and electric lighting were probably unequalled outside Dublin and Belfast. He carried out important works for the War Department, and of late years he had formed an extensive connection amongst the R. C. clergy. At the time of his death he had almost completed the large new R. C. church at Roscommon.

Mr. Fee was well known as an excellent and convincing platform speaker, and it was a characteristic of the man to be fearlessly outspoken. More than twenty years ago, when his whole connection lay amongst the landed gentry, he did not scruple to take a prominent part on the tenants' side in the land war of 1881. Just as, when he had developed his connection amongst the R. C. clergy, just before the introduction of the first Home Rule Bill, he, disagreeing with its principle, never hesitated to express his views publicly, and became one of the most successful platform speakers who visited England in the interests of the Unionists during two general elections. It is creditable to all parties to remember that neither landlords nor clergy ever sought to punish him for his manly conduct.

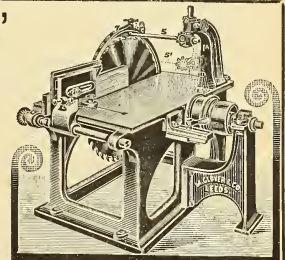
The Ellerberck Hospital Workington is being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

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(Concluded.)

	each.
Chimney pieces, plain	£ s. d. ... 0 0 6
Ditto. ornamental	... 0 1 0
Dresser for kitchen, 5ft. long by 2ft. deep by 8ft. high	... 0 2 6
Drying posts, gate posts	... 0 0 3
Door scrapers	... 0 0 1
Fanlights, including frames, one side	... 0 0 6
Ditto. ditto. semi-circular, 8ft. diameter, with 24 radiating squares	... 0 2 0
Finger plates	... 0 0 2
Fineals of ventilators	... 0 0 3
Feed cisterns	... 0 0 6
Furnace fronts	... 0 0 2
Flagstaff, 15ft. high, 13in. girth	... 0 2 0
Ditto., 18ft. high, 16in. girth	... 0 2 0
Ditto., 25ft. high, 20in. girth	... 0 2 0
Ditto., 30ft. high, 24in. girth	... 0 3 0
Ditto., 40ft. high, 30in. girth	... 0 5 0
Hinges, large, ornamental, 2ft. 6in. long	... 0 0 3
Hinges, hook and ride, swing bars, door springs, stay hook, posts, gate stops, blocks, etc.,	... 0 0 1
Hooks, pins, staples, knobs, holdfasts, small hinges, rings, latches, bolts, under gin. long, knockers, buttons, handles, fasteners, etc.,	... 0 0 1
Indicator posts, average 8in. high, and 15in. girth, and small telephone boxes	... 0 0 2
Labels, not exceeding 1ft. super., including circular labels	... 0 0 1
Ditto., 1 to 2ft. super., including circular labels	... 0 0 2
Locks, including staples, bolts over gin. long	... 0 0 2
Rafter feet, ends of purlins, small moulded blocks, etc.,	... 0 0 1
Sash or door frames, under 10ft. super., one side	... 0 0 8
Sash or door frames, 10 to 25ft. super., one side	... 0 0 10
Sash or door frames, 25 to 50ft. super., one side	... 0 1 6
Soot doors and frames, lamp doors and frames, etc.,	... 0 0 2
Standards for bells in clock tower	... 0 1 0
Stoves or ranges, painted black	... 0 0 6
Ventilators, including frames	... 0 0 3
Ventilating gratings or ventilator frames, one side	... 0 0 2
Window sills, standards, etc.,	... 0 0 3
Wooden ventilating turrets, about 3yds. super., total	... 0 1 0
Brunswick black, two coats, fenders	... 0 0 4
	per doz. £ s. d. ... 0 10 0
Sash squares, under 1ft. super.	... 0 10 0
Sash squares, 1 to 2½ft. super.	... 0 10 0
Sash squares, 2½ to 5ft. super.	... 0 1 0
Sash squares, over 5ft. super.	... 0 1 0
Sash squares, iron (any size), including frames	... 0 10 0
	per inch. £ s. d. ... 0 0 ½
Writing letters or figures, plain, one or two coats	... 0 0 1
Shaded letters or figures, plain, one or two coats	... 0 0 1

TWO COATS, SUPERIOR COLOURS, ETC.

	per yd. super. £ s. d.
Plain painting, finished olive and light green	... 0 4½ 0
Plain painting, superior colours	... 0 0 6
Wash, rub down, stop, and 1 coat egg-shell gloss composition, with 1 coat finishing gloss enamel in Calley's paint	... 0 0 6

	per ft. run £ s. d.
Two coats superior colours on fillets, rails, etc.,	... 0 0 1
	each. £ s. d.
Sash or door frames, 10 to 25ft. super.	... 0 0 6
Sash or door frames, 25 to 50ft. super.	... 0 0 8
Sash squares, under 1ft. super.	... 0 0 10
Sash squares, 1 to 2½ft. super.	... 0 1 0
Cleaning, oiling, and double gilding vane	... 1 0 0
Clock face, 4ft. diam., and double gilding figures and hands	... 0 0 10
	per yd. super. £ s. d.
Gilding in best oil gold, double, vane, globe, letters, etc.,	... 0 2 6

VARNISHING AND POLISHING.

	per yd. super. £ s. d.
Varnish 2 coats copal, and clean and touch up prior	... 0 0 6
Clean and touch up old graining, and twice varnish	... 0 1 0
Burn off and grain oak and twice copal varnish	... 0 2 0
Ditto. to frames exceeding 25ft. super.	... 0 3 0
	per ft. super. £ s. d.
Clean, prepare, and re-polish old wood work	... 0 0 6
	per ft. run. £ s. d.
Clean, prepare, and varnish 2 coats copal, old oak handrails	... 0 0 3
	per yd. run £ s. d.
Ditto., ditto., ribs, 6in. girth	... 0 0 3
	£ s. d. per doz. £ s. d.
Varnish 2 coats copal, and clean and touch up prior, sash squares, 1 to 2½ft. super.	... 0 1 0
	each.
Clean, prepare, and re-polish hinged mahogany seats	... 0 1 6

TARRING.

	per square. £ s. d.
Tarring and sanding on roof, 1 coat	... 0 2 0
	per yd. super. £ s. d.
Tarring with Stockholm tar mixed with ochre or Spanish brown and pitch, 2 coats	... 0 0 3

PAPERHANGER.

	per doz. yds. run £ s. d.
Take down old paper, and wash, stop, and prepare for and hang new	... 0 1 3

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ANSWERS TO CORRESPONDENTS.

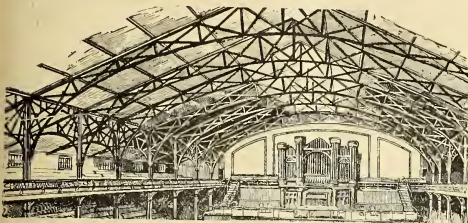
We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

E. MACDOWELL COSGRAVE, M.D.—We thank you for your kind letter, and shall bear in mind your suggestion respecting the systematic photographing of buildings about to be demolished; we fear, however, that in the majority of cases, they would be of comparatively small interest.

J. J. PHILLIPS AND SON, ARCHITECTS.—We are grateful for your interest, and have, we think, anticipated some of your suggestions by introducing practical articles. We hope to deal fully with all the other matters. We have already published more than one article on Irish building stones.

A. E. MURRAY, R.H.A.—Very many thanks. We shall try and give more information of the kind you suggest, but it is sometimes hard to get hold of. If architects would send us brief notices of their works it would help us very greatly.

T. JACKSON.—We cannot publish your letter, as it might afford material for a libel action. If you will give us *authenticated* particulars, and send us your address (to ensure *bona-fides*), we shall be happy to take up the matter.

CONSTRUCTIONAL**IRON WORK.****ROOFS.**

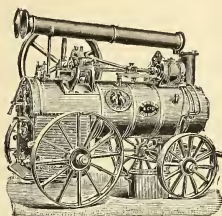
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SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp.
Excavator and Bricklayer.

Drainage.

(Continued.)

Coping to Porch. To be 6" thick and 14" wide, finely axed where exposed, weathered, and throated, and circular sunk where shown, to be in lengths of not less than three feet, where possible, and to be well bedded and jointed in cement.

Template Course to Girders and Front Wall in Porch. To be 3" thick, with fair beds and joints of the required width projecting for plate of rafters, as shown on the drawing, Section C.D.

Cover Stones to extract Flues and Chimneys. To be 3" thick, of the size required to cover the flue in each case, with fair beds and joints, and fine axed on all exposed edges.

Sills to extract Flues. To be 1" x 1" x 4 1/2" x 3", finely axed on all exposed edges, and with two stopped weathered sinkings 4 1/2" wide.

Templates. Provide templates to R. I. joists, 18" x 9" x 6", with fair beds and joints, and set in cement.

Chimney Piece in Kitchen. To be York stone, 1 1/2" jambs and frieze, 7" wide, 2" shelf 10" wide, the whole rubble on all exposed parts, and fixed with all necessary wrought iron cramps.

The shelf to have rounded corners, and the back edge to be pinned into wall 2" deep in cement.

Panel in Front Wall with Inscription. Build into wall, as shown in elevation, a granite panel 9'-6" long, 1 foot high, and 6' deep, in 3 stones, fine axed on all exposed surfaces, sunk on face, with moulding 3' girth all round, mitred at angles,

The letters to be V sunk, plain block, 6" high, clean cut with sharp edges.

Carpenter and Joiner.

Timber. The fir timber to be from Memel, Riga, or Dantzic, or of such other kind as may be approved, and to be equal in quality known as best middling.

Swedish timber is not to be used.

The scantlings of all timbers to be sawn die square, with sharp angles, and to hold the full size figured on the drawings.

The deals to be Baltic Yellow, equal in quality to first class goods of the best Russian or Swedish shipments.

Battens, deals, and planks, will not be objected to where fir scantlings are specified, so long as they are equal in quality to the fir and free from blemishes.

The pitch pine and oak to be of approved quality.

The contractor to satisfy the architect that the timber and deals are of the kind and quality specified, and well seasoned, free from sap, large or loose knots, shakes, and other defects.

Wall and pole plates, ridge hips, purlins, to be in long lengths, and the rafters and joists to be in one length each where required.

Scarfs to be 18" long.

All wall plates to be properly halved where required, and to be bedded in mortar.

Centering. Provide, fix, case, and remove suitable centering prices to all arches, &c., also all requisite staying, casing, &c., for the proper formation of concrete work in roof of w.c. in yard, hearths, gullies, and pits.

Wall Plates and Sleepers. To be of fir, 4 1/2" x 3", except where other width figured on the drawings.

Lintels. Where required to be of fir, 12" longer than the opening over which they are fixed, and 1" in depth for every foot of bearing, and the full thickness of the wall in width or to the back of external arch, as the case may be.

Wood Plugs.

The joiner's work (excepting where breeze concrete fixing blocks are provided) to be fixed to walls by means of a sufficient number of wood plugs, cut with a twist, to be 6" long, 3" wide, and 3/4" thick.

The joints in the brickwork to be raked out, and the plugs to be well driven in and cut off true to a plumb line.

Spacing of Joists, &c.

All floor and ceiling joists and rafters to be spaced 12" apart in the clear.

Floor Joists.

To be of fir, those to ground floor to be 2" x 7", and those to rooms and landing on first floor to be 2" x 9". The bathroom, lavatory, and w.c. to have joists 2" by 6".

The Tallest Sky-scraper yet.

The *Metal Worker* says that the Aetna Real-estate Company have secured a site 118 1/2 feet x 98 feet in area on Broadway and Thirty-third street, New York, near Herald Square, upon which, it is stated, a thirty-story building will be erected, which will measure 455 feet from the level of the curb to the tip of the iron ornament on the roof. This will make it 73 feet higher than the Park Row Building, which heretofore held the palm among the sky-scrapers. The cost of the land and building is placed at about 2,500,000 dols. This announcement directs attention to the number of feet which some of the tall New York office buildings already erected rise above the street level. The figures available show the following:—

Building.	Stories.	Feet.
Aetna	30	455
Park Row	29	382
Manhattan Life	22	348
St. Paul	26	308
American Surety	23	306.1
American Tract	23	306
Empire	20	293
Home Life	16	280
Washington Life	19	273
Gillender	16	273
Bowling Green	19	272.6
Bank of Commerce	20	270
New York Life	12	270
Standard Oil	15	263
Commercial Cable	21	255

An Anonymous Gifts—of £10,000 has been received by the Bishop of Truro to build the central tower of his Cathedral. Over £500 has already been collected for this purpose as a memorial to Queen Victoria. The total cost of this portion of the work is £13,000.

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- 10,000 Quebec, St. John, and Nova Scotian Spruce Deals.
- 2,000 Quebec Red Pine Deals.
- 1,000 First Quebec Yellow Pine Deals.
- 1,000 First Quebec Yellow Pine Boards, planed.
- 100,000 Flooring and Sheetting Boards.
- 1,000 Whitewood Boards.
- 3,000 Pitch Pine Flooring and Sheetting Boards.
- 20,000 American Slates, 24 x 12 and 14.
- 100 Squares Quarter-Sawn Dry Oak Flooring Boards.
- 43 Logs Round American Ash.

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SARACEN FOUNDRY,
GLASGOW.

APPOINTMENT.

Work.	For Whom.	Particulars from	Last date.
Architect or Surveyor for Labourers' Cottages	Oldcastle R.D.C., No. 1	Mr. Thomas F. Jenkins, Clerk Oldcastle Workhouse	18th March

COMPETITION.

Work.	For Whom.	Particulars from	Last date.
Additions to Ennis District Lunatic Asylum, £50 prem.	Committee of Management	Mr. John Enright, Ennis.	1st June

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
Waterford Convent, Good Shepherd	Superiress	Mr. W. H. Byrne, Architect, Suffolk-street, Dublin	No date
Alterations and additions to Furniture Stores, Dublin	Messrs. Beverly Smyth & Co., Dublin	R. M. Butler, Architect, Dawson Chambers, Dublin	15th March
Ten Labourers' Cottages, Blanchardstown	North Dublin R.D.C.	Mr. John O'Neill, Clerk, North Brunswick Street	13th March
Additions Rockwell College, Cahir	Reverend President	Mr. G. C. Ashlin, R.H.A. Architect, Dublin	No date
Alterations Mount St. Joseph's	The Redemptorists	Mr. G. C. Ashlin, R.H.A.	No date
St. Alphonsus Convent, Limerick	Community		No date
Workhouse, Lisbellew	Board of Guardians	Mr. R. Halvey, Clerk, Lisbellew	26th March
Plumbing Works, Portumna	Portumna R.D.C.	Mr. M. Lavan, Clerk, Portumna	23rd March
New Buildings, North Dublin Union	Board of Guardians	Mr. John O'Neill, Clerk, North Brunswick-street	27th March
1,100 Yards Concrete Pavements, Kingstown	Urban Council	Mr. John Donnelly, Clerk, Kingstown	
Aughrim Water Supply	Rathdrum R.D.C.	Mr. B. Manning, Clerk, Rathdrum	15th March
Kilkenny, 21 Labourers' Cottages	Tae Corporation	Mr. K. Comerford, Council Office	14th March
Dublin, Materials, Concrete, etc.	General Prisons Board	Prisons Board, Dublin Castle	No date
Belfast, Alterations to Church	Willowfield Church Vestry	Mr. W. J. Fennell, M.R.I.A.I., Scottish Provident Buildings, Belfast	14th March

TENDERS.

LONDONDERRY—Plumbing, Gasfitting, and Bell-hanging to Hollymount, Rathmullan; accepted tender, Messrs. Doherty & Boylan, Londonderry, £104.

BUNCRANA—Building residence at Bunrana, Co. Donegal, for Mr. P. Porter; accepted tender, R. Colhoun & Co., Londonderry, £560. Mr. Jas. P. M'Grath, C.E., Architect.

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ENNIS DISTRICT LUNATIC ASYLUM.

COMPETITION PLANS.

Plans will be received in competition by the Committee of Management on or before the 10th June, 1901, from competent Irish Architects practising in Ireland, for additions and alterations to the Ennis District Lunatic Asylum, Co. Clare. Plans of the existing buildings can be seen on application to the Resident Medical Superintendent.

The plans to be sent in under motto, and a sealed letter should accompany each set of plans, bearing the name and address of the author of the design. Plans to be drawn to a scale of sixteen feet to one inch.

An estimate of the cost of the proposed new buildings, setting out the cube of the buildings, with the price at which it is calculated, will be required.

The Committee may appoint an Assessor to adjudicate on the Plans submitted in competition. A premium of £50 will be paid to the author of the design placed first, but they do not bind themselves to adopt the design placed first by the Assessor, or any design, and it does not necessarily follow that the author of the design placed first will be employed to carry out the work.

By Order,

JOHN ENRIGHT, Clerk of Asylum.

26th February, 1901.

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[Established Jan. 1859.]

No. 989—Vol. XLIII.

HEAD OFFICE:

MARCH 27, 1901.

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DUBLIN.

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TOPICAL TOUCHES.

From a northern county comes a complaint that the roads have not been inspected by the county officials for months.

On Monday the Corporation refused to receive a deputation of citizens, who desired to enter a protest against the costly electric lighting scheme.

Forty-eight of Messrs. H. and J. Martin's carpenters have gone on strike, alleging that the firm were getting journey work done in Dublin, and sending it to be fixed by non-union men in Belfast, where the carpenters' strike is still going strong.

The Department of Public Health in New York has made a demand for more assistants to combat the tenement house evil more effectively, and has thereby provoked the retort from an American professional contemporary that this request is only one more of the efforts of Tammany to corruptly control every department of municipal life.

At Bray, the other day, Councillor Jones upbraided the Chairman of the Urban Council with being "only an old bread-car driver stuck in the chair," in reply to which the Chairman politely observed that Councillor Jones was "a low clown" and "a miserable cur." Ultimately peace reigned.

In Budapest the majority of the leading actors and actresses have pledged themselves not to accept an engagement in a theatre on which any Austrian architect, builder, decorator, painter, mason, or any kind of labourer had been employed, and a theatre built by the hated foreigners will be rigidly boycotted by nine-tenths of the population of Budapest. This is in consequence of negotiations having been conducted with a firm in Vienna regarding the proposed construction of a new national theatre.

One by one the old lines of bastions, which formed the *cuneate* of every fortified place, have of late years been gradually disappearing; condemned (says the *United Service Gazette*) as useless in the face of modern artillery in France. Among those thus doomed are the lines at Gravelines, near Lorient, La Rochelle, Rochefort, St. Malo, Cette on the Mediterranean, and Vizzaronia on the Island of Corsica; the report of the Minister of War, in which the razing of these fortifications is proposed, remarking that they have now become antiquated and useless, and hinder the development of the towns they surround.

Mr. Batsford, the well-known publisher, has brought out a charming volume on the Old Farm Houses and Cottages of Kent and Sussex. It contains descriptive notes and sketches by Mr. Guy Danber. It is so beautifully got up, and illustrates such lovely old examples, that every architect ought to have a copy. Rural England is, in many districts, fast changing its aspect, and this record of old times is most valuable. Here in Ireland our picturesque thatched cottage has given place to the hideous "union" cottage, with its horrid, thin, purple slates. ...

The shareholders of the Derry Central Railway are thinking of selling their property to the Northern Counties Railway Company.

Mr. P. Kennedy, of Limerick, has secured the contract for Mount St. Alphonsus' Convent, for which Mr. Ashlin prepared the plans.

The Council of the A.A.I. have nominated Mr. C. J. MacCarthy, the City Architect, as president for the session 1901-2, and Mr. E. Bradbury and Mr. G. F. Beckett as joint secretaries. These selections will commend themselves to the members.

Judging from the reply of Mr. Balfour some time ago in the House of Commons, there seems little prospect of getting back to Ireland the Celtic gold ornaments now in the British Museum. It is to be hoped that the Irish members won't rest until these treasures are once again in Ireland.

The Architectural Association ends the active work of the classes, meetings, and lectures this week after a phenomenally successful season. Mr. F. Batchelor proving an ideal president. It was to him the inception of the very successful technical demonstrations was due. Mr. F. Hicks, who will retire from the secretaryship at the close of the session, was eminently popular and hard-working.

The friends of the late Dr. Archibald H. Jacob, editor of the *Medical Press*, propose to raise a memorial in testimony of his life-long work in the interests of the profession. Subscriptions may be forwarded to Sir Charles Cameron, C.B., 51, Pembroke Road, Dublin, or to L. H. Ormsby, Vice-President, R.C.S., 92, Merrion Square West, Dublin, Hon. Treasurers, or to G. F. Blake, Registrar, Royal College of Surgeons, Stephen's Green West, Dublin. Dr. Jacob was a frequent writer on matters of sanitary interest.

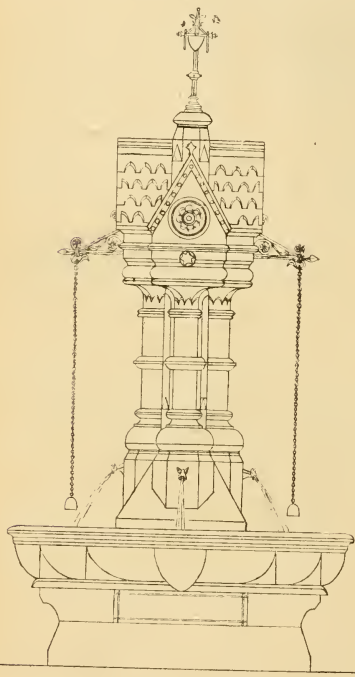
Touching our remarks concerning County Surveyors, comes a report of the row which the Governors of the Carlow Asylum have lately had with their architect, Mr. Quilton, the County Surveyor. The Board alleged Mr. Quilton increased the accommodation of the Asylum by a total of 28 beds to the tune of £30,000. Mr. Quilton in a long report indignantly denies the imputation.

Such are the amenities of a Board of Guardians! Mrs. Moran, a member of the Lewisham Board persisted in calling Major West, another member of the Board, "Mister" West. The Major offered to produce his commission if Mrs. Moran produced her "marriage lines." Madame retorted by attending the next meeting, armed with a whip, and horse-whipped the gallant officer, who smilingly smoked a cigar the while.

The process of restoration of the famous Palace of the Popes at Avignon is, says the *Gaulois*, actively proceeding. The battlemented towers of the chief wing is almost entirely repaired, and now exhibits the imposing frontage which characterised it in the fourteenth century. At present the old citadel of the Popes is occupied by a regiment of infantry, but the latter are about to evacuate the building, which will then be properly utilised by the municipality of Avignon as a museum.

A DUBLIN MADE FOUNTAIN.

The fountain is to be erected at Eadestown, Co. Kildare, to the memory of Captain Tickell, by his tenantry, from the design of J. J. O'Callaghan, Esq., Architect, F.R.I.A.I. The base and plinth are of limestone from the celebrated Ballyknocken quarry of Mr. W. Osborne; the fountain and basin are of cast iron; the ornamental finials, brackets, etc., of wrought iron. The granite plinth and base is 7 feet wide on the octagonal and 2 feet 6 inches high; the cast iron basin 8 feet in diameter and 1 foot 6 inches deep, which, with the fountain and finials, the whole structure stands



FOUNTAIN AT EADESTOWN.

Designed by Mr. J. J. O'CALLAGHAN, F.R.I.A.I., Architect.
Executed by Messrs. John Fagan and Son, Dublin.

16 feet high, and when placed in position will make a handsome and imposing memorial. There are four ornamental lions' heads, with stop cocks for supplying water to basin, intended for the use of cattle, and by an ingenious arrangement the overflow from the basin will supply four small troughs underneath for dogs. There are also four highly ornamental brackets with cups and chains suspended, for the use of the thirsty wayfarer.

We believe this is the first fountain of its size and description that has ever been made in Dublin, and it proves that there is no necessity for going to Scotland or elsewhere for stock patterns, when architects can have their original designs carried out as well at home. The castings are sharp, fine, and clear, and the mouldings perfect in every detail.

The contractors for the work are Messrs. J. Fagan and Son, 18 Great Brunswick-street, Dublin, who entrusted the castings to Messrs. Tonge and Taggart, South City Foundry. The whole work is a credit to the Irish artisan, and we hope that architects who may require similar work will remember that work of this kind can be executed in Dublin.

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ROYAL INSTITUTE OF THE ARCHITECTS OF
IRELAND, 20 LINCOLN-PLACE, DUBLIN.

Exhibition of R.I.B.A. prize drawings will be held at above rooms from March 25th to 31st—10 a.m. to 6 p.m. Admission on production of membership card.

BREVITIES.

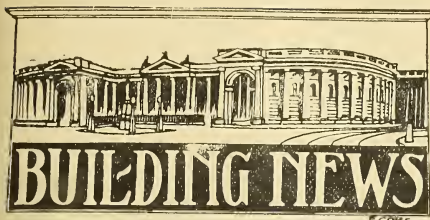
The Extensions to the Grimsby Workhouse Infirmary are being warmed and ventilated by means of Shorland's Patent Manchester Stoves, with descending smoke flues; Patent Manchester Grates, and Shorland's Inlet and Outlet Ventilating Panels, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Clergymen Who Have Made Their Own Pulpits.—There are several clergymen who have made pulpits for the churches in which they conducted the services. The Rev. William Devenish, B.A., Trinity College, Dublin incumbent of Abbeylara and Drumlummon, County of Longford, Ireland, preaches regularly in a pulpit made, erected, and painted by himself in Abbeylara Church. The Rev. J. Jackson, when Rector of Ledbury, in Herefordshire, preached from a pulpit made by himself. He adopted wood-carving as a hobby, and many beautiful specimens of his handiwork are to be seen in the furniture of the church at Ledbury as well as in the carved bosses of the chancel roof. The pulpit, which was carved by Mr. Jackson, was given by him to the church in memory of his only son, who died in 1873. The curate-in-charge of Hempstead Church, the Rev. John Escreet, who is an expert carver in wood, on the rebuilding of that church, gave, as his contribution to the structure, a reading-desk, lectern, and a pulpit which he had carved. Mr. Escreet also executed the carving on the South porch of the church.

Says the (Devonshire) Western Daily Mail:—"Mr. Harry Hems, of Exeter, writing in the IRISH BUILDER on the treatment of oak, thinks that an inch a year is not sufficient for seasoning oak. He himself would never think of using an inch thick board for any work unless it had been down at least three years. He gives an instance of an eight-inch plank which, after it had been drying for twenty years, was still found to be wet interiorly. No doubt those who did the fine oak work found to-day in so many of our old Devon churches carefully studied the timber they used, and it would appear that Mr. Hems is not anxious to depart from these traditions or to give countenance to the hurry of the age."

The American Cement Trade.—America seems to be going ahead in the production of cement, as in so many other industries. A recent communication from the British Vice-Consul at San Francisco states that the Utah cement, which is admitted to be of good quality, is being sold in that city at 2.25 dols. per barrel, a price with which British merchants cannot compete. Tenders have lately been invited for 10,000 barrels of cement to be used in the fortification works at Point Bonita, and in the circular defining the conditions of contract is a clause to the effect that the domestic cement will be given preference over the foreign article. This is a new departure on the part of the United States Government engineers, who have hitherto declined to use American cement on fortification work. Owing to great industrial activity during 1899 in the United States of America, and the increased use of iron, steel, and concrete as structural materials, the demand for cement was greatly stimulated and new factories have been started in various parts of the country. The total output of cement for 1900 is the largest on record. But the output of natural rock has suffered considerably from the competition of artificial cement. The production of slag cement is increasing, and a superior article is easily disposed of. The total production of all kinds of cement was 17,828,698 barrels, valued at 16,918,919 dols. in 1900, compared with 16,201,324 barrels, valued at 15,978,181, in 1899. The following tabular statement of the production of Portland cement by the States shows an increase of 46.5 per cent. in 1900 over 1899:—

	1899.	1900.
	Barrels.	Barrels.
California	48,000	51,000
Michigan	402,000	731,709
New Jersey	960,000	1,220,000
New York	507,931	515,724
Ohio	482,542	524,711
Pennsylvania	3,250,209	4,891,664
Other States	154,938	568,500
Total	5,805,620	8,503,308



Ballycastle.—A communication was received from a number of ratepayers living on Rathlin Island complaining that a surveyor had not inspected the roads in the island for the last twelve months, and the Council decided to send a copy of the letter to the County Surveyor. The Local Government Board wrote stating that it would be necessary for the Council's architect to attend the local inquiry to be held on the 28th inst. into the improvement scheme made by the Council under the Labourers' Acts, and that the labourers whose applications were being considered were usually asked to attend. This is a significant comment on the keenness of the County Surveyors in their quest of country work. Mr. Wm. Moore, K.C., M.P. for North Antrim, wrote acknowledging receipt of the Guardians' resolution on the subject of sanatoria for consumptive patients, and stated that he was quite in accord with them. The disease was, however, proved to be so highly contagious that it occurred to him that the Guardians could not overlook this danger while awaiting the carrying out of the necessary provisions under their fourth resolution. He would be much pleased to assist in bringing the matter before Mr. Wyndham's notice as President of the Local Government (Ireland) Board.

Belfast.—PROVISION FOR CHRONIC LUNATICS.—A lengthy circular was forwarded by the Local Government Board to the Board of Guardians in reference to the necessity for making adequate provision for the maintenance and treatment of harmless chronic lunatics, of whom over 4,000 were stated to be at present in various Union Workhouses of Ireland, where they could not in the nature of things be properly looked after. The committee were asked to determine upon the best method of dealing with the matter, and the circular expressed a doubt as to whether in the long run the erection of buildings, specially fitted for the reception of these cases, might not be more economical than the adaptation of existing buildings erected for other purposes.

BELFAST CARPENTERS' AND JOINERS' DISPUTE.—The unanimous refusal of the carpenters and joiners in the Belfast district to accept the terms referred to them from the joint meeting of employers' and workmen's representatives held on the 18th February was not unexpected by anyone who had an opportunity of ascertaining the mind of the rank and file of the men. A correspondent of the *Belfast Weekly Telegraph* remarks there are quite a number of important new buildings which must shortly be commenced, whilst work on some already in progress has reached the stage when the employment of skilled joiners has become a necessity. I was informed some weeks ago by one of our very wealthiest citizens, who tells me he is largely interested in shop and warehouse, as distinct from residential property, that quite a number of important schemes involving both new and reconstructions, have been deferred in the hope that early spring would have seen a termination of the dispute. On the other hand, the revaluation, with its enormous and apparently disproportional increases in the ratings, will hinder development until the appeals arising from it have been decided, and its effects on sales and lettings fully understood and provided for. As to the fact that joiners work 54 hours a week at 8½d. per hour in the local shipyards, that is caused by an agreement which exists that Belfast ship-building joiners' wages shall rise and fall with those paid on the Clyde—a provision rendered absolutely necessary if Belfast shipyards are to compete in the world's markets on equal terms with their great Scottish rivals. The members of the Master Builders' Association have not the same outside com-

petition to encounter, and, whilst it is a long time since any important building job in Belfast was done by other than Belfast builders, local firms have successfully invaded Dublin and other cities, and carried out the largest contracts satisfactorily. In this connection it must not be forgotten that house joiners' wages in Glasgow are now 10d. per hour, and that it is manifestly unfair that, while ship-building joiners' wages on the Clyde and in Belfast are identical, there should be such a difference as 1½d. per hour in house joiners' wages in the same two districts. Trade generally could not be duller, and it is unquestionable that building has been completely overdone in every district.

Carlow.—THE CHAPEL.—A letter was read from the Office of Lunatic Asylums, Dublin Castle, returning plans and specifications for the proposed enlargement of the Roman Catholic Church. In reference thereto they pointed out that the drains are not shown on the plan. Nor is the point of discharge given. The material in altar rails was not shown. They also pointed out other omissions, and remarked that if the chapel is not at present lighted the sum provided for the purpose appears to be insufficient. When the plan had been completed in the particulars specified they asked to be supplied with same in duplicate.

Carlow.—An inquiry into the scheme for the erection of labourers cottages within the area of the Carlow Rural District, will be commenced in the board-room of the workhouse, on Monday next, before Captain Connellan, Local Government Board Inspector. There are 171 representations scheduled, all, with 7 exceptions, based on sanitary defects or insufficiency of accommodation. The exceptions are applications for allotments in the Bagnalstown division. It is to be hoped that all owners, occupiers, and labourers will loyally co-operate with the Council in carrying the scheme to completion.

On the following Monday the Slieveemargy scheme will be inquired into. In this district there are 49 representations, all based on sanitary defects.

The Carlow Rural District Council at their bi-monthly meeting on Thursday, unanimously approved of a site selected by a local committee for a new and much-required cemetery near Bagnalstown, generously placed at their disposal by Mrs. William Vesey and the trustees of the Dunleckney estate. In the course of discussion the Chairman said he considered the committee had been very badly treated at the previous meeting when their recommendation for a site was summarily rejected.

Celbridge.—On 12th April the Rural District Council will consider tenders for labourers' cottages.

Cork.—EXHIBITION TO BE HELD IN MAY, 1902.—At an influential meeting held in the Municipal Buildings, Cork, to-day, presided over by the Lord Mayor, and supported by Lord Bandon, it was resolved to hold an exhibition in Cork, opening in May, 1902. Letters of encouragement, with promises of support, were read from most of the Irish bishops and heads of municipalities, etc., and a subscription list was opened, and generously headed by local representative men.

Dublin.—ALTERATIONS AT CASTLEKNOCK COLLEGE.—Important alterations to St. Vincent's College, Castleknock, County Dublin, are about to be begun immediately, and will include a very elaborate grand staircase in oak, and hall panelling to staircase and vestibule. The entrance vestibule will be entirely panelled in oak, with a black and white marble pavement. The lobbies are treated as arcade, all in solid oak, carved and richly moulded, as are also the door and window trimmings. Other works comprise the oak wood block flooring, rich modelled plaster ceilings, and an elaborate lantern light over the staircase, &c. The general style of the treatment is of Georgian character. Mr. Walter G. Doolin, M.A., is the Architect.

The important contract for the big Convent at Carysfort, Blackrock, has been let to Mr. James Kiernan, of Dublin. Mr. George L. O'Connor is the architect.

The Tram Company are about to erect some fourteen cottages for their employés at Clonskeagh from the designs of

Mr. Samuel Nugent, the company's engineer-in-chief. Mr. D. W. Morris prepared the quantities.

Tenders have lately been received by the architects, Messrs. Carroll and Batchelor, for the new Victoria Ophthalmic Hospital, Dublin, but nothing in reference thereto has as yet been made public. Messrs. Beckett and Metcalfe prepared the quantities.

Dungarvan.—The Ballinacourty and Ballyduff water schemes will be completed during the present year. There will be also another new medical residence erected at Seskinane similar to the medical officers's house at Ring. With those improvements the Dungarvan Union will have its affairs up-to-date.

The scheme for labourers' cottages will also be completed this summer, and something like 100 new cottages to be provided for the labourers, in addition to those already built in the district.

Larne.—SEWAGE LOAN.—A communication from the law department of the Board of Works was read enclosing engrossed deed of mortgage in respect of a sewerage loan of £300 for completion. A resolution having been passed authorising the affixing of the Corporate seal this was done, after which the mortgage deed was signed by the chairman, two councillors, and the clerk, and duly witnessed. A further resolution also in terms of a form enclosed by the Board of Works, for the lodgment of the money advances, was also passed. The Clerk said he had received an application from the contractor for the sewerage works for the payment of an instalment of £200, and Mr. McQuillan moved that application be made to the Board of Works for £200. Mr. Beggs seconded the motion, which was passed.

Limerick.—The contract for the large and important works at Mount St. Alphonsus for the Redemptorist Fathers has been given to Mr. P. Kennedy, of Limerick. Mr. G. C. Ashlin, R.H.A., Dublin, was the architect. Mr. D. W. Morris, also of Dublin, took out the quantities.

Mountbellew.—On yesterday the Board of Guardians received tenders for alterations to the workhouse buildings. Mr. J. Smith, Ballinasloe, is the architect.

Shandon.—Several costly and beautiful gifts are about to be presented to the Church of St. Mary, Shandon, by Mr. J. H. Bennett. Mosaic marble pavement is to be laid down in the chancel and choir, designed by Mr. Walter Lonsdale, the artist who drew the cartoons for the figures in St. Finbarre's Cathedral. Other gifts are an oak door for the vestry, the doorway of which is to be treated in unison with the general design of the church; a font, in imitation of the celebrated one in Inverness Cathedral; and a baptistry to receive the font, opposite the tower and spire. These splendid gifts will greatly enhance the beauty and dignity of the church, which is already one of the most beautiful in Cork.

Sixmile Cross.—The Presbyterian Church here has been reopened after alterations.

Old Morrison's Hotel has gone at last, and a landmark of the city with it. An English contemporary suggests that it was built by the well-known architect, Sir Richard Morrison as a residence. There is no foundation for this idea. Sir Richard resided on the north side of the city—Gloucester street, we believe. Mr. John Morrison, contractor, late of Bagnalstown, and now an assistant surveyor of the Board of Works, is, we believe a grand-nephew of his. Charles Dickens stayed at Morrison's, and Morrison's was the invariable resting place of the Italian opera from the earliest days of its connection with Dublin down to the late Colonel Mapleston's time. The late R. M. Leary used to give a vivid description of a supper party, at which he was present, somewhere in the "forties," when Jenny Lind was the guest of the evening, and how "Great Jenny," as he called her, sang, to the enchantment of them all.

SOME EARLY IRISH CHURCHES.

By WILLIAM MACARTHUR.

The introduction of Christianity into Ireland seems to have been quickly followed by the erection of a very large number of small churches, or chantries, more correctly, and county Dublin, in particular, seems to have been specially favoured in this respect. Of course, it is out of the question to fix exactly the date of the erection of many, but in the fifth and sixth century we have the time many of them can be linked by the majority of followers of the subject. They are usually plain, oblong little buildings, with nave and chancel; at the west the main door, and an east window in the chancel wall, usually unglazed, and triangle-shaped, without any excessive ornaments; the arch between the chancel and nave, often of a semi-circular shape, but pointed in later buildings; plain gables, also a feature, and with tiny three-arched belfry. We have an example in the little ruined chantry of St. Fintan's, on the east side of Howth about sixteen feet only in length, and with very simple windows; and, again, the ruined church at Kilbarrack, met with on the road to Howth; and, indeed, about forty similar buildings seem to have existed in county Dublin long ago. The Church of St. Nessan, on Ireland's Eye, however, shows some diversity from the prevailing style of the times, and had a circular cloigtheach or belfry. This island long ago was called Ini-mac-Nessan, or the island of the sons of Nessan, who was a prince of the Leinster Royal house, and had seven sons. In the "Martyrology of Aengus" they are named at the Ides of March, "The Sons of Nessan, of the island now called Ireland's Eye, flourished in the sixth century." Colgan also gives their names and date of death. In addition to the round tower belfry mentioned above, the doorway was of a semi-circular arch shape, with sides inclining to each other, and placed at the west side, in common with the older Irish churches. The most celebrated of these little churches appear to have been St. Fintan's, Howth (Marsh's Library has a written manuscript of the life of St. Fintan included, called the "Bodex Kilkennien-sis"); St. Nicholas' at Kinsealy, St. Brigid's at Killester, St. Catherine's at Fieldstown, St. Brigid's at Kilbo-see, St. MacCullin's at Grullagh, All Saints' at Ballymadun, St. James's at Palmerstown, St. Finian's at Esker, and also churches at Kilbarrack, Whitechurch, Crugh, Westpals-town, Bremore, Glassnorr, Killeigh, Balcadden, Dunsoghby, St. Margaret's (Ballyboghinn, a few miles of Glasnevin), Ballyfernot (past Inchicore, Alderg, Kill-of-the-Grange). On the other hand, square steeples had Balrothery and Donabate, and Baldungan and Howth are in the pointed Gothic style. Howth has the pointed arch, in which the bells now in Howth Castle once hung, and a western door also. In the original church an aisle was added to the northern side, and at the eastern end a three-light window, with an arch of simple form of the sixteenth century style. A north county Dublin church had its origin in the Danes, in St. Doulagh's, with its stone roof, small transepts, and also remarkable for not standing due east and west. St. Olave's, Tullow, was another Danish church. The little island off Skerries (St. Patrick) also had a church on it, of the usual chantry type, and also on Dalkey Island long ago existed another little early Irish church, but I must adjourn these jottings for the present.

The Belfast people, after simply howling for a re-valuation of their city, are not happy now they have got it, and lately held a meeting at the Y.M.C.A. to denounce the unfortunate arbitrator. As our contemporary, the *Belfast Critic*, remarks:—"The truth of the whole matter is that Mr. Talbot, simple-minded Southerner that he is, took Belfast at its own valuation. We have been prating so much about our wonderful progress and prosperity that it is no wonder that other people swallowed the gush, and rated us accordingly. And all the time Belfast has only been a sort of dropical village, with a fictitious prosperity. For wherever you go you find nothing but tales of bad trade, etc., etc. Although—a miracle—the banks are establishing new branches every day."

DUNDALK BRICK WORKS.

(From the Dundalk Democrat.)

The manufacture of bricks is, comparatively speaking, a modern industry in Dundalk. The older houses were all stone built, and not until well into the present century did the demand for building material suggest the idea of brick making to some speculators of this town. So far as tradition in the matter survives at the present day, the first bricks made in Dundalk were turned out by a man named Trainor—father of Mr. John Trainor, who is the owner of extensive house property on Castletown road. The clay was got somewhere on the bank of the Castletown river near the old gardens. Mr. Jackson Turner also made bricks, somewhere about Lisdoon or Dowdallshill—probably on the site of either of the old-established brick works still in operation there. Whether these were the earliest works of their kind one cannot now be certain. The parliamentary *Gazette* of 1846 says that at that date bricks were made here for local use, but the industry must have been of small dimensions in those days, for Anthony Marmion in his carefully compiled account of the trade and manufacture of Dundalk, ten years later, makes no mention of brick-making. The big extension of Dundalk, and the replacing of the many mud-built cottages by better structures had not yet created the larger demand for bricks that came later on.

Mr John Murphy's

brick works at Lisdoon are the oldest about Dundalk—at least as regards modern working. Mr. Murphy has been, we believe, engaged in this branch of trade for 35 or 40 years, and still continues to turn out a good, sound, serviceable article. His works adjoins those of

Mr. McDonald.

These works were carried on by the late Mr. McDonald, baker, of Church street, and subsequent to his death, by his family, until quite recently, when they passed into the hands of a syndicate of which a local builder of the same name is the active member. Both these brickfields are on the north bank of the Castletown river—or rather some distance away from it. They have the advantage of being situated on a very good vein of clay, out of which a durable building material is made. For many years they supplied the wants of the local building trade, until the establishment of

Le Mesne Brick Works.

in 1885 or thereabouts.

The late Mr. Charles Robson, J.P., then agent of the Roden Estate, was a man who in those days possessed a considerable amount of enterprise and business capacity. More than one branch of trade he dabbled in, with more or less success; but the brick-making business was the most profitable of them all. Mr. Robson probably saw in the remarkable extension of the town, and activity in the building trade, which set in about that time, an opportunity for the enterprising capitalist. He set up a plant in a corner of the Demesne, next Castletown, and soon was turning out considerable quantities of bricks. In '86 Mr. Charles Hilland took over the management; and, when, in 1890, on Mr. Robson's death, the works were taken over by a company, Mr. Hilland's services were retained. The company was formed with the modest capital of £2,000, and since its initiation it has paid an average dividend of 13 per cent., and carried to reserve 40 per cent. of its capital. High water mark was in '07, when the dividend was 20 per cent.; but the last dividend—15 per cent—was something to be by no means ashamed of in these days of empty-coffered limited liability companies. The directors of the company are Messrs. H. O'Connell, V. S. Carroll, J. D. O'Neill, J.P.; and W. M. Patterson, J.P. A fact that shows the soundness of the company's trading is that since its formation only one bad debt has accrued, and that for an insignificant sum—£1 13s. 4d., to be exact! Would that this could be said of many firms in any branch of trade.

A good deal was said—and justly so—of the success of the Demesne Brickworks Company in securing the contract for the supply of bricks to the builders of the Portrane Asylum. 4,000,000 bricks were duly supplied, but owing to a rise in the price of coal last year the company found it un-

profitable to continue supplying the asylum contractors. But four millions is not bad for one order.

People have often asked why the better class of brick, suitable for facing, is not made here. The answer is that the chemical constituents of the clay hereabouts are not such as to colour the brick uniformly for facing. The bricks can be, and they are, made perfectly hard and of perfect proportions, but they have not the even red colour desirable for facing. They have been, and are being used, where appearance is not an important consideration, and the results are perfectly satisfactory as regards wear, etc. But we have to go to Belfast for good, well-coloured, Irish facing brick. For the rest the local manufacturers turn out a sound, well burned, common brick, serviceable and reliable, and are well content.

How Bricks are Made.

The old adage that you can't make bricks without straw is completely out of date. That was all very well when our primitive forbears plastered up river mud into rough cubes and dried the same in the sun—as less civilised nations do at the present day. Straw was then as necessary to the brick-maker as chopped hair to the plasterer. But kiln-burned bricks are innocent of straw. Clay—just common clay—is the sole constituent of a brick.

The subsoil of Dundalk is nearly all clay, so that there is no reason why the operations of the brickmaker should not go on here indefinitely. Big inroads have been made by eight years' work on the Demesne Company's leased territory inside the north wall of the Demesne, but the tram line which follows the excavators has still a long way to go before it comes to the end. This tram takes the clay from the pits to the works. As a preparatory measure the clay goes through double sets of rollers, which crush any lumps, etc., it may contain, and then drops into the mill. This is called a pug mill. It mixes up the clay thoroughly, much as a baker does the dough for to-morrow's batch of bread. Two mouthpieces has the mill, from which alternately issue thick, viscid, evenly-shaped, four-sided lengths of clay, which are pushed down to the cutting table. The cutting is done by wires, ten bricks at a time being cut off the webs; and there we have the brick in outline, but as yet a mere lump of soft, damp, blackish clay.

The next operation is that of slowly drying the embryo bricks. The drying is an operation carefully performed. Long rows of sheds receive the undried cubes, which are laid upon the heated iron floors in serried ranks, and left to get rid of the moisture which they contain. In due time they go to the kilns. The one most in use at the Demesne works is a big 10-chamber adaptation of the Hoffmann patent, fired from above, and undoubtedly a very perfect form of kiln, as the results show. It may surprise the uninitiated to learn that the bricks are some three weeks' completing their process of burning in these kilns. During a great part of this time, however, they are in contact only with heated gases, and again they are, for perhaps a week, slowly "cooling off" before being removed. A glance into one of the big kilns, while the actual process of burning is going on shows a mass of incandescence, a perfect series of ventilators, dampers, etc., regulating and transmitting the heat according to the will of the operators. At times of extreme pressure other forms of kiln are used, but none is so effective, and at the same time so economical, as the Hoffmann patent.

Why not 'Dundalk Cement'?

A couple of years since Mr. Hilland, the manager of the Demesne Brickworks—a man as able as he is diffident of notoriety—pointed out in our columns the extreme suitability of Dundalk as a centre for the manufacture of cement. It is only practical men like himself that know that "Portland cement" is not made at Portland at all, and derives its name only from the resemblance between a block of the cement and one of the well-known Portland stone. The cement is composed—to put it in the most intelligible language—of the predominating elements in common clay and limestone. Mr. Hilland pointed out that a suitable clay for the making of cement surrounds Dundalk in inexhaustible quantity, as well as the other requisite—limestone. He himself, in the

late Mr. Robson's time, had the clay and the lime-stone of the Kilch quarry examined by expert chemists in this country and in England, with the result that they were declared eminently suitable materials for the manufacture of cement. But neither then nor since did the capitalists of Dundalk take up this idea, though nearly all the cement used in this country, and it amounts to tens of thousands of tons annually, is imported from England. To establish the industry and to fight the opposition of the old-established English makers would take considerable capital. But there is a good deal of that same lying dry in the coffers of Dundalk men, that would do a lot of good for the town if wisely invested in the development of new "local industries."

OUR BELFAST LETTER.

(FROM OUR OWN CORRESPONDENT)

The Re-valuation of Belfast.

The one absorbing topic here, just now, is the revaluation of the city. This has just been completed by one, Mr. Talbot, from Dublin, who, if wise, will give Belfast a wide berth in the immediate future. The result of his labours has been to increase the gross valuation of the city by 25 per cent. But, as about two-thirds of the area has a practically unchanged valuation, the state of the other third may be guessed at. Increases of 300 per cent. and over are not uncommon. As a consequence the great majority, if not all, of the leading manufacturers and merchants have held a public meeting and banded themselves together for the purpose of exhausting every legal expedient towards the upsetting of the new valuation. It is questionable if this measure will attain much success. But the effect of the revaluation will be to largely restrict new building operations, and so a dull year's trade may be anticipated. Already the city has been over-built residentially. It is estimated that fully 12,000 houses stand vacant.

The New Lord Mayor.

The Lord Mayor of Belfast for 1901 is Sir Daniel Dixon, head of Messrs. T. Dixon and Sons, which is one of the largest city firms in the timber and slate line. Sir Daniel is a J.P. and Deputy Lieutenant of the city, and a large property owner. He resides in a very large and fine mansion at Ballymenach, near Hollywood, Co. Down, and is reputed to be extremely wealthy.

The Government School of Art.

A serious rupture has taken place between the students and the Board of Management of this Institution, which is soon to be incorporated with the new Technical Institute. The Government School of Art is the sole institution of its kind in our midst, and has never been a popular or well patronised one. Three years ago, however, a change for the better was effected through the introduction of fresh blood on its Board of Management. This fresh blood initiated the radical change of having the adjudication of the students' work decided by specialists instead of by a committee of the board. The result was to increase both the attendance of students and the quality of their work. This year, however, the older members of the board made themselves felt, and decided to revert to the former method of adjudication. The students gave notice that if this were adhered to they would withdraw their exhibits. Both things have occurred, and there has been a considerable correspondence in the Press on the subject, in which Mr. J. M. Small, secretary to the board, has essayed to defend the latter. His case is that the awards of the trained experts gave individual displeasure to the donors of prizes. "Nothing," he says, "would have given the board greater pleasure than to continue to invite year by year eminent art authorities for the adjudications. But the decisions of authorities, however gratifying to the students, did not, in all cases, please the donors of the prizes." By which it will be seen that artistic and technical education in Belfast is, at present, in a very parlous state. Anything more reprehensible than such a view of its duties by a public board is unimaginable.

Decorative Art Exhibition.

Messrs. George Morrow and Son, decorators, etc., Clifton street, have just given a very interesting decorative art ex-

hibition. Their premises were fitted up as the different rooms, halls, etc., of a modern dwelling-house. Needless to say, the effect was very educative. Each room was in itself a complete study in furniture, fittings, and decoration, the styles adopted being in each case distinct. It is regrettable that we are not treated to more of this kind of thing in Belfast.

The Carpenters' Strike.

This lengthy and unfortunate strike shows no signs of settlement. An effort towards a friendly arrangement was recently made, when representatives of the Master Builders' and Carpenters' Societies met in conference under the presidency of Sir James Musgrave in the Town Hall. But the effort failed owing to the carpenters' refusal of any compromise. They determined to adhere to the terms for which they struck. But really the present state of trade does not warrant such an attitude, and I cannot help thinking the carpenters rather foolish. Anyhow, they are likely to continue cooling their heels in idleness for some time to come.

New Works.

Tenders for the execution of the following works are advertised for:—

A block of four additional houses at the Shiels Institution, Carrickfergus. Quantities can be obtained from W. H. Stephens and Son, Donegall square North, Belfast. Tenders to be lodged with E. S. Obre, 25, Clare street, Dublin, on or before the 20th April.

Extension and alterations to Town Hall, Coleraine, Co. Antrim, for the Urban District Council. Quantities and form of tender obtainable from Town Surveyor, Coleraine. Tenders to be lodged not later than 4th April.

Dispensary and medical officer's residence at Richhill, Armagh, for the Armagh Board of Guardians. Plans and specifications to be seen at the Clerk of Union's office. Tenders to be lodged not later than 1st April.

New premises at Whitehead, Co. Antrim, for Messrs. Fleming and Co. Plans and specifications to be seen at the office of the architect, Mr. John Russell, 22, Waring-st. Tenders to be lodged not later than the 30th March.

Other contracts will shortly be open for tendering, the most important, perhaps, being two new filter beds for the Belfast Water Commissioners, at an approximate cost of £15,000. Quantities for these will shortly be obtainable from Mr. S. C. Hunter, Scottish Provident Buildings. Mr. L. L. Macassey is the engineer of the scheme. Mr. Hunter has also in hands the quantities of St. Donard's Parish School, Bloomfield, of which Mr. H. Seaver is architect. A new branch for the Northern Banking Co., Ltd., is being projected, the site being in Donegall square.

War Department.

Two new blocks of Soldiers' Quarters and one block Married Quarters, with other accessory buildings, will, in the course of a few days appear for tenders. Application for quantities should be made to the Commanding Royal Engineer, Belfast. The contract will run to about £15,000. Contractors desirous of tendering should first apply to have their names put on the list of those invited to tender, as these W. D. contracts are not advertised. An expenditure of about £2,000 is also about to be made at Hollywood on a new rifle range. The scheme for the fortification of Belfast Lough seems to have fallen through.

Carrickfergus.

The Urban District Council of Carrickfergus is proposing to spend £2,500 in providing a new graveyard for the town. The Harbour Commissioners are also applying for a loan towards the deepening of their harbour.

The Cathedral.

I looked in at the new cathedral the other day. It is proceeding apace. The outer aisle walls are almost at eave level, and the great concrete bases for the nave columns are set. The design is working out well, and is excellently proportioned. But, frankly, I do not like the style. It is French Gothic of a period analogous to our Norman, and such a style seems an anachronism amid our modernity. But it was, I believe, determined by considerations of cost, and not the one that Sir Thomas Drew would have preferred to select. The cathedral is being built round and over the old parish church, which is still open for service.

OUR CORK LETTER.

BY OUR OWN CORRESPONDENT.

Railways

At the half-yearly meeting of the Cork, Blackrock, and Passage Railway Company it was stated that about £120,000 would be required to complete the extension to Crosshaven. This work was stopped last July, and the contractor made a claim against the company, and was awarded £34,000. The company are now seeking Parliamentary powers for an extension of time to complete the works, and also for the increased capital required, and are at the same time making an application to the Commissioners of Public Works for a loan.

It may be interesting to note that the Chief Secretary for Ireland stated in the House of Commons that in connection with the amount granted by Parliament for the construction of railways in Ireland there remains a sum of £270,286 unexpended. So it is to be hoped that a portion of this will be available for the completion of the above undertaking.

The Cork Brick Company are constructing an Aerial Railway from their works at Ballinphellic to Ballinhassig, a distance of four miles, at a probable cost of about £7,000. By this means they hope to be able to save about 5s. a ton in the carriage of their materials, etc.

Waterworks.

The Kinsale Urban Council consider they have been badly treated by the War Office. It appears they at the urgent request of the Local Government Board prepared a scheme for a supplemental water supply, the cost of which exceeded their borrowing powers. They then entered into an arrangement with the War Office to supply the garrison with water, in consideration of which the latter would find the money, which exceeded the borrowing powers of the Council. On the strength of this they spent about £200 in preliminary expenses, and now the War Office says that the existing supply is good enough, so the Council are without their supplemental supply, and also without their £200.

The same Council feel that they will not be justified in carrying out their proposed scheme for a water supply for Crosshaven at an estimated cost of £10,000, owing to the non-completion of the railway to that place.

There was a proposal made at the Charleville Rural District Council that a competent engineer should be asked to report on the feasibility and cost of obtaining a water supply for the town of Charleville. This, it was stated, would cost £10 at the most. However, one councillor evidently thought he was qualified to earn the fee, as he said "the pipes would cost about £1 a yard; that would be at least £10,000. Then a reservoir and filtering tanks would be required, and by the time the whole thing was finished it would amount to £20,000." Happy Charleville! They got their advice free, and the proposal was abandoned.

Municipal Matters.

For some time past several of the coal merchants of the city have made a practice of storing coals on the quays. This, very rightly, has been considered an intolerable nuisance. They say they are driven to do so by the action of the quay labourers in not allowing them to use steam winches for unloading the coal from the ships. One firm has applied to the Corporation for permission to erect appliances on the quay for discharging cargoes, and the application has been refused, although a similar privilege has been granted to the Great Southern and Western Railway Company. The coal merchants state that if they are allowed to use steam winches that it would save the ratepayers 1s. a ton on the price of coal. The best solution of the whole difficulty would be the following:—The Corporation own land near the Marina, which commands a long river frontage, for which they paid a large sum of money. Could they not co-operate with the coal merchants and erect stores along the bank of the river, into which the cargoes could be discharged direct. By doing this they would increase the value of their property, accommodate the coal merchants, and mitigate the nuisance.

It is proposed that the Corporation should appoint a committee to consider and report on the advisability of extending the borough boundaries of the city, which boundaries

were fixed in the year 1840 by the Municipal Corporations Act, and included an area of 2,685 acres, and it is now thought that it would be an advantage to include about double that area. The Corporation by so doing would reduce the taxes, and increase their borrowing powers, their authority, and their income.

General

It is proposed, on the initiative of the Lord Mayor, the Right Hon. Edward Fitzgerald, to hold a Cork Industrial Exhibition next year, and the matter has been taken up most enthusiastically by the whole county, and promises of support have been received from all quarters.

The Right Hon. Earl of Bandon, K.P., has promised to act as president, and a large and influential committee has been appointed. There is a general feeling that it will be a success, and no doubt it will be a great benefit to the city.

The last Exhibition was held in the year 1883, and was in every way a success, both financially and commercially.

The buildings were erected by Mr. John Delany, contractor, at a cost of about £13,000, from the designs and under the superintendence of Mr. Robert Walker, P.P.S.A., A.M.I.C.E., Architect.

NEW BOOKS.

"A SHORT HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND: 1500—1800." By Reginald Blomfield, M.A., Architect, London. Geo. Bell and Sons, 1900. Price 7s. 6d. nett.

For years past we have looked for such a short, concise History of the English Renaissance as this, and have looked in vain. For, to use a commonplaceism, "it supplies a long-felt want."

Of late years there has been a great revival of interest in the work of the period dealt with, and the prevalent phase of our restless architectural world of fashion looks to the Georgian period for inspiration in design as fervently as any lady looks to that Mecca of the female mind—Paris as the source of all that pertains to fashion. 'Tis an unfortunate condition of things that our modern taste in architecture is as transient as the brief day of a Paris mode. Yet, still, while we range from Classic to Gothic, through the Lombardo-Venetian of the early Gothic revival down to present-day Georgian predilections, we must strive to be acquainted with the history and *motif* of each. And of our own stately English, or more properly, British Renaissance, we have had no "short history." Messrs. Brown and Gotch's, or Belcher and MacCartney's splendid volumes, with their lavish and grand illustrations, are to the ordinary student accessible only as books of reference—they are too dear—and the same applies to that no less excellent work, the larger history of our present author, Mr. Blomfield. His short history fulfils a most useful purpose in providing the student with a cheap and handy text book on the subject. Mr. Blomfield gives us *seriatim* an account of the works of all the more important men of the period, and his text is greatly enhanced by some admirable illustrations—and in order, too, that the student may not be too much carried away by the quaintness of the smaller Georgian works, the author adds a plate of all the five Orders of Palladio as instancing the solid basis upon which design must rest.

Only one regret we have, and that is that Mr. Blomfield has cut down his work, to our mind, a little too much. Had he published the work on a somewhat larger scale no one would have objected to pay, say, from 15s. to 18s. for a text book containing still more of these capital illustrations.

Generally speaking, the treatment is excellent and attractive, and the author displays much judgment in dealing with a large amount of work in a brief compass. His style is careful and analytical. It will be interesting to our readers to note that Mr. Blomfield rates the work of James Gandon very highly indeed, classing Somerset House and Newgate Prison, with the Custom House, Dublin, as the three best buildings erected since the time of Wren.

Altogether, this admirable text book is one which every student ought to possess.

CORRESPONDENCE.

GLIMPSSES OF THE WEST INDIES.

TO THE EDITOR OF THE IRISH BUILDER.

SIR—I am much obliged for your notice of my book, but I just wish to correct your statement that "the author was appointed to posts under the War Department successively in nearly all of the Antilles."

I was stationed for four years in St. Lucia *only*, which is a great military and coaling place. This is clear on careful reading. My visits to other islands were merely pleasure trips, as Jamaica and St. Lucia are now the only two military stations in the West Indies, owing to the recommendations of the Imperial Defence Commission.

An article of mine on "Building in the West Indies" appeared in this journal about a year ago.—Yours faithfully,

JOHN T. REA.

Surveyor, War Department.

Curragh.

TO THE EDITOR OF THE IRISH BUILDER.

DEAR SIR,—I would call attention to the terms of the advertisement issued by the Ennis District Lunatic Asylum in your last number, more particularly to the clauses, "The Committee *may* appoint an assessor," equally they may not appoint an assessor. The clause as it stands is no guarantee that they will appoint a *competent* assessor, and not a few recent competitions have been referred to assessors, about whose qualifications as assessors there have been two opinions.

The next clause reads—"A premium of £50 will be paid to the author of the design placed first, *but* they do not bind themselves to adopt the design placed first by the assessor, or any design, and it does not necessarily follow that the author of the design placed first will be employed to carry out the work."

Referring to the instructions issued for illumination on these points, clause No. 19 states: "The whole of the drawings, descriptions, and estimates of the design placed first to be the property of the Committee of Management." "Excessive cost of design will disqualify an architect submitting designs," but in the instructions no information is given as to what the Committee consider a reasonable cost, or as to what they mean to spend. Neither do they state what remuneration the architect carrying out the work is to receive. Perhaps they do not intend to employ any of the competitors, hence they have not considered this trifling detail. Comment is needless, for any architect who has read his IRISH BUILDER for the past six months, and if any protest is to be made by the Irish Institute of Architects, it would be more to the point if that body and its worthy president would pass their resolutions *before* the competition is decided, and not after, as they did in the case of the late competition fiasco fattered by the General Assembly of the Presbyterian Church. If they find that the conditions are impossible, or such as no competent architect with any self-respect would submit to, let them and their president (who are supposed to guard the interests of the profession generally) be wise in time, and take timely and dignified action in the matter.

Another point. Competing architects are informed that "plans of the existing buildings can be seen on application to the Resident Medical Superintendent at Ennis Asylum." No copies of these plans are furnished, which means that any architect who wishes to compete will have to travel to Ennis—and it is no short journey from Dublin,—measure up, or make his own copy of the plans of the existing buildings for 314 patients, and all before he can have his chance of submitting plans in a competition along with others, and then there is the further chance that, after all, the author of the best plan will have to run his chance of being entrusted with the work on any terms which the Committee may decide to give him, for he has two alternatives—either to accept those terms or the generous £50, with the subsequent delightful feeling that someone else is carrying his plans into execution, perhaps even a County Surveyor.—Yours truly,

OLD-HAND.

NOTE.—The Royal Institute of Architects of Ireland has already issued a circular to its members cautioning them against competing.—Ed.

OUR ILLUSTRATIONS.

FOUNTAINS AT EADESTOWN, COUNTY KILDARE.

(Block in Text).

Designed by M. J. J. O'Callaghan, F.R.I.A.I., executed by Messrs. John Fagan and Sons, Dublin.

CHURCH OF ST. MICHAEL AND ST. MARY, NEW ROSS (INTERIOR VIEW, LOOKING WEST).

This church, the only one in Ireland of the same dedication, was begun some years ago, and is now practically completed. It is built upon the site of the old Franciscan foundation, from which the modern dedication is derived. The view we publish is of the interior, looking west, and showing the very handsome stone and marble organ gallery in the distance. The stone used for the dressings of the interior is Bath stone from the Monkspark Quarry, while the shafts of the nave arcade are of red Peterhead granite. The octagon shafts of the gallery are of Galway green marble; the wall-shafts of the roof and the shafts of the chancel arch are of the same material. Black Kilkenny fossil marble is also extensively used for the bases of the gallery shafts, for responds, and in the Baptistry, and elsewhere. The Communion Altar and chancel steps are of polished black Kilkenny marble. The steps in the side chapel are of an Italian marble closely resembling Pavonazza marble.

The church has been designed by Mr. Walter G. Doolin, M.A., F.R.I.B.A., of Dublin, and was built without a clerk of the works, under the close personal attention of the contractor, Mr. Andrew Cullen, of New Ross, who has throughout spared neither time nor trouble in his daily endeavour to make his share of the work as perfect as possible.

The church will seat about 1,200 persons, and the "shell" contract amounts to about £17,000.

A very handsome High Altar of Pavonazza and white Carrara marble has been erected, the contractors for which were Messrs. James Pearse and Sons, sculptors, of Dublin. The Altar of St. Joseph in course of erection is of elaborately wrought alabaster. The Lady Altar is of Caen stone and Carrara marble, both by Messrs. Pearse. The white and green marble altar rail was made by Mr. Edmund Sharp, sculptor, Dublin.

Some very beautiful encaustic tiling from mediæval patterns has been laid in the chancel and chapels by Messrs. Craven, Dunnill and Co., of Jackfield, who also laid the tiling in the Baptistry and throughout the church. The wood block flooring is of pitch pine, and has been laid by Mr. J. C. Ebner, of London. A very handsome pair of hand-wrought brass gates for the chancel were made by Messrs. John Smyth and Son, of Dublin, who also made the Tabernacle door, which is a special feature of the High Altar. It is of silver, parcel gilt, and is a replica of a fine old silver plaque of repousse work, representing the Last Supper. The original, of sixteenth century date, came into the possession of the Countess of Kenmare some years ago, and it was specially lent for the purpose of reproduction by its present owner, the Very Rev. Thomas Lawlor, Killorglin.

TO TEST SLATES.

Professor Brunner, of Lausanne, recommends the following method, taken from Fresenius, to easily and rapidly estimate the quality of slates:—Take a sample of slate 7 by 3 centimetres, and hang it by a cotton thread in a glass vessel containing 100 cubic centimetres of water saturated with sulphurous acid in such a manner that the slate will not dip into the liquid, then shut the glass and keep it in an ordinary temperature. Bad slate decomposes in a few days or even hours, becoming exfoliated; if it remains compact, it will grow very friable and spongy. Good slate will preserve its primitive state for four to six weeks. A superior quality of slate has no sign of decomposition after several months. The rapid decomposition of bad slate is due to the presence of pyrite, carbonate of lime, and magnesia. The pyrite is transformed into sulphuric acid, which decomposes the other minerals. The carbonate of lime is transformed under the influence of humid air and carbonic acid into soluble bicarbonate.

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CHURCH OF ST. MICHAEL AND ST. MARY, NEW ROSS

The Interior, looking East.

MR. W. G. DOOLIN, M.A., Architect.

THE IRISH BUILDER.

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4/- per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street Dublin.

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No. 89

THE COUNTY SURVEYORS AND PRIVATE PRACTICE.

In a recent issue of the *Irish Times* there appeared a letter over the *nom de plume* of "Fingallian," on the subject of County Surveyors who engaged in private practice. "Fingallian" calls attention to a decision recently arrived at by the Balrothery Rural District Council, which determined that any engineering works which they had the patronage of should be given to private practitioners. The Chairman, Mr. O'Neill, who is also Chairman of the Dublin County Council, made some apt remarks on the subject. Now, if the District Council deem this course wise in regard to public works, how much more true is it of private works, and the determination of the Council will commend itself to the common-sense of our readers. There is an old saying, "No man can serve two masters." Like most sayings and epigrams that become platitudes, it is but partially true. Yet the truth remains. The public pays a substantial salary to every County Surveyor in Ireland, and only the other day the Local Government Board was fighting the battle of these officials in regard to their claim to adequate remuneration. In their struggle for suitable, and even liberal, payment, the county officials have the sympathy of every thinking person, and particularly of their brethren of the engineering and architectural profession. Yet still we find the County Surveyors permitted to engage in private practice. The maintenance of even the most moderate practice in these days of fierce competition demands the putting forth of much active energy and perseverance—in other words, hard work. And will any sensible person seriously suggest that a public official responsible for the engineering works and the roads of a whole county, drawing a salary of, say, £600 to £1,000 a year, and earning it, can fulfil these conditions consistently with his duty to the ratepayers, not to speak of the time lost in the demoralising, but now almost inevitable, "cadging" for work.

We will say little of the grave injustice inflicted upon private practitioners (themselves ratepayers), and who are minus that very substantial base of operations—a large official salary. Moreover, the surveyors do not content themselves with purely engineering work, but undertake architectural work of a highly specialist character, for which neither their training nor practice fits them. Some of the plums of architectural preferment during recent years in Ireland have fallen to them, notably the asylums work throughout the country. Surely this is an instance in re-

gard to which the Institutes of Engineers and Architects might properly have a word of remonstrance to say. The Institute of Architects, in particular, it would seem to us, ought to move, because its members feel most aggrieved. But we suppose it is one of those opportunities to be let slip whilst some abstract point of professional dogma is being debated.

THE TENEMENT SYSTEM IN DUBLIN.

In a letter to the *Freeman's Journal*, Mr. Walter G. Doolin, M.A., Architect, calls attention to the unnecessarily drastic and costly character of the Corporation schemes for remedying the discreditable state of the housing of the poor. Mr. Doolin makes a valuable suggestion, that instead of wholesale demolition and the erection of costly "dwellings," which can only be let at a more or less prohibitive rent, that blocks of three of the old houses should be thrown into one and remodelled on the flat system, giving each family a roomy tenement consisting of living and two sleeping apartments, with separate closet and wash-house, and to show the feasibility of this he has prepared a plan illustrating his ideas. Mr. Doolin further declares the bye-laws of the city of Dublin to be inadequate and behind the times in respect of the regulation of tenement houses. To anyone who has had much experience of tenement property in Dublin, it must be perfectly obvious that the grosser defects of the existing houses are due, not so much to structural rottenness or unwholesomeness, as to superficial filth on the part of the tenants, and to the greed of the owners, who extract the last farthing from their unfortunate and necessarily too often demoralised tenants. "Sanitation and more of it" has become a catch cry of the professional philanthropists, and the root evils are lost sight of. Most of the old Dublin tenements are eighteenth century mansions, sound and well-built—filthy and neglected, we grant, yet capable of improvement.

Sir Charles Cameron, C.B., in a recent letter to a daily contemporary, replies to some criticisms, and alludes to the superiority of the Dublin bye-laws over those of other cities and towns. But Dublin tenement houses stand by themselves. For one thing, the system is more widespread, and, unlike London, the actual houses are often of very superior construction. One thing is plain, and that is that the compulsory buying out of the "tenement landlords" in Dublin is a very burning question, and that the existing law needs extension in a marked manner. The tenement house owners are, as a rule, speculative middlemen, and a curse to society, generally entirely lost to any sense of responsibility, and seeking only to continually evade their liabilities under the law. It would surprise many people not intimately acquainted with the tenement system in Dublin were the names of these owners made public, for many there would be found figuring in the list who are looked upon as eminently useful citizens and leaders of public opinion.

With the high rates of building now prevalent in Ireland, private enterprise cannot hope to remedy the evil to any great extent by building new houses for the poorer classes, and the same applies in a lesser degree to Municipal enterprise, for remunerative rents would be prohibitive to poor people.

One suggestion has been made, and a most useful one it is, adapted from the New York bye-laws, namely, that every tenement house should, like a vehicle plying for hire, bear in some prominent portion a notice setting forth the name and address of its owner, who would be directly responsible, and upon whom legal notices might be promptly served. The existing system of registration under the Public Health Department does not fulfil all the desired conditions.

DUBLIN'S APPALLING DEATH RATE.

During the last few weeks the death-rate of Dublin has reached a rate which is simply appalling when compared with other cities and towns of Europe. Only in the plague-stricken cities of India is it surpassed. For many years past the Corporation have done good service to the community in removing from our midst many pest spots of disease and over-crowding; yet, despite the disappearance of these rookeries of filth and misery, Death, undismayed, holds

his own right bravely.. What is the cause of this state of things? Many reasons are periodically set forth, argued, debated, dropped, and revived—over-crowding, bad, sanitation, and so forth. All of these predisposing elements have been strongly fought, and yet the evil continues.

For our own part, we believe that the inherent unhealthiness of Dublin's polluted subsoil has much to answer for, that want of good sanitation—i.e., sanitary convenience and overcrowding are only contributory, not main causes, of disease. Many other towns have areas even more crowded, and just as unsanitary as any in Dublin, and still the death-rate is lower, and we believe the much-abused "Jerry Builder" is but little to blame. We think that the standard of living—comfort and personal nourishment—is exceptionally low in our city, thus inducing a lowered vitality and predisposition to disease. We believe if this could even in some measure be remedied, and habits of greater cleanliness encouraged, the death-rate would be perceptibly lowered, and over-crowding and its attendant evils lose half their horrible attaching penalties.

The following tables, abstracted from the official report of the Registrar-General, kindly sent to us, will be found instructive, as comparing Irish death-rates with those of some of the principal cities of Europe and America:—

TOWNS, &c.	WEEK ENDING.				Average Rate for 4 weeks
	Feb. 16.	Feb. 23.	Mar. 2.	Mar. 9.	
23 Town Dists. ...	27.6	27.7	34.2	31.0	30.1
Armagh ...	28.5	14.3	7.1	14.3	16.1
Ballymena ...	22.5	0.0	33.8	22.5	19.7
Belfast ...	23.8	23.2	26.4	27.9	25.3
Carrickfergus ...	17.5	29.2	23.4	11.7	20.5
Clonmel ...	19.5	19.5	68.2	24.3	32.9
Cork ...	22.1	33.2	29.1	29.8	28.6
Drogheda ...	22.8	38.0	22.8	32.8	26.6
Dublin Reg. Area ...	34.3	33.7	41.5	39.6	38.5
Dundalk ...	37.7	12.6	20.9	8.4	19.9
Galway ...	26.4	30.2	22.7	41.5	30.2
Kilkenny ...	37.8	14.2	51.9	37.8	35.4
Limerick ...	23.9	29.5	30.9	23.9	27.1
Lisburn ...	17.0	29.8	29.8	25.7	25.6
Londonderry ...	23.6	18.8	36.1	31.4	27.5
Lurgan ...	22.8	27.4	31.9	18.2	25.1
Newry ...	36.2	16.1	40.2	4.0	24.1
Newtownards ...	45.4	28.3	34.0	28.3	34.0
Portadown ...	18.6	37.1	30.9	37.1	30.9
Queenstown ...	5.7	23.0	5.7	11.5	11.5
Sligo ...	5.1	35.5	15.2	20.3	19.0
Tralee ...	44.8	44.8	28.0	50.4	42.0
Waterford ...	29.8	19.9	31.8	25.9	26.9
Wexford ...	22.6	22.6	13.5	22.6	20.3

CITIES.	POPULATION (enumerated or estimated).	ANNUAL DEATH- RATE per 1000 living.
London ...	4,589,120	19.3
Edinburgh ...	302,262	22.7
Paris ...	2,511,620	25.8
Brussels (with 8 Faubourgs) ...	570,844	15.0
Amsterdam ...	517,032	17.5
Rotterdam ...	320,204	21.3
The Hague ...	205,328	18.2
Copenhagen ...	354,000	18.0
Christiania ...	226,423	23.6
St. Petersburg ...	1,132,677	20.5
Berlin ...	1,863,128	17.2
Hamburg ...	691,340	18.1
Dresden ...	497,500	24.4
Breslau ...	412,959	25.4
Munich ...	165,000	24.2
Vienna (with suburbs) ...	1,050,662	23.4
Buda-Pesth ...	685,340	20.6
Prague and Faubourgs ...	393,091	25.4
Rome ...	518,333	28.3
Turin (10 days)...	344,203	19.0
Venice ...	174,378	23.9
New York ...	3,444,075	19.6
Philadelphia ...	1,293,697	22.1

THE ROCK OF CASHEL.

When St. Patrick was building the great church on the Rock of Cashel, the workmen used to be terribly annoyed, for whatever they put up by day was always found knocked down next morning. So one man watched, and another man watched, but about one o'clock in the night every watcher fell asleep as sure as the hearth-money. At last St. Patrick himself sat up, and just as the clock struck one, what did he see but a terrible bull, with fire flashing from his nostrils, charging full drive up the hill, and putting down every stone, stick, and bit of mortar that was put together on the day before. "Oh, oh!" says the Saint, "I'll soon find one that will settle you, my brave bull." Now, who was this but Usheen (Oisín) that St. Patrick was striving to make a good Christian. Usheen was a very crooked disciple. When he was listening to pious reading or talk, his thoughts would be among the hunters and warriors of his youth, but he loved the good Saint for his charity to himself. The day after St. Patrick saw the bull he up and told Usheen all about what was going on. "Put me on a rock, or in a tree," says Usheen, "just by the way the bull ran, and we'll see what we can do." So in the evening he was settled comfortably in the bough of a tree on the hillside, and when the bull was firing away up the steep like a thunder-bolt, and was nearly under him, he dropped down on his back, took a horn in each hand, tore him asunder, and dashed one of the sides so hard against the face of the wall, that it may be seen there to this day, hardened into stone. There was no further stoppage of work, and in gratitude they cut out the effigy of Usheen riding on his pony, and it may be seen inside the old ruins this very day.

A person pretending to have been on the rock, says there is a rude mark, as of the side of an ox, on the outside of one of the walls, and a knight mounted on a diminutive quadruped in bas-relief within.—From Kennedy's "Fireside Stories of Ireland."

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Glanmire Church, Cork, has been fitted with the latest improved "Small Tube" hot-water heating apparatus by Messrs. John King, Limited, engineers, of Liverpool and Donabate, employing their economical coil heater with wateryway fire-bars.

The Great Wall of China—The great wall of China is threatened with demolition. It is stated that an American engineer is on his way to China on behalf of a syndicate of Chicago millionaires, who desire to obtain a share in the expected big contract to be given out by the Chinese Government for the demolition of the wall. The wall is a striking evidence of the immobility of Chinese civilisation, and probably its destruction may be intended to show that now China has made a start in Western civilisation, she means to make up for her stationary condition during the past 2,000 years. Erected 200 years before Christ, for the purpose of keeping back the warlike Tartars, the Great Wall of China is older by three centuries and a-half than the walls of Hadrian and Antonine in our own country. These latter were insignificant in comparison with the Chinese work, neither of them being nearly 100 miles in length, while the engineering feat of the Emperor Shih Hwangti extends from the shores of the Gulf of Pechili to the remote inland Chia-yu barrier gate, a distance of 1,200 miles. The British walls have almost disappeared, being only traceable here and there by green mounds or shapeless fragments of masonry, except at a few points which owe their preservation to the care of the archaeologist. The hand of time, aided sometimes by the hand of the utilitarian builder, who has found some parts of the walls convenient quarries, has slowly but slowly removed almost the whole of the work of the Roman engineers. Shih Hwangti did his work in a most substantial manner, for his wall remains to-day in almost perfect condition.

NOTES ON STABLES, THEIR PLANNING, AND FITTING.

(SPECIAL TO THE "IRISH BUILDER.")

By R. M. BUTLER, Architect.

As every Irishman is said to love a horse, it naturally follows that he will be interested in the horse's dwelling-place—the stable. Ireland has long been famous as a horse-breeding country, but if you want to see elaboration in stables you must go to England—say some wealthy hunting man's establishment in "the 'Shires'"; yet I am not sure that these palatial stables are much the better for practical purposes.

Aspect.

Regarding the aspect, much the same rules as govern the placing of a dwelling house, apply the conformation of the ground, and the surroundings will to some extent modify your selection. It should, if possible, be an open, airy situation on gravel soil, not sunk in a hollow, or, worse still, surrounded by trees. Convenience of the approaches from the house, and also the paddock or the exercising ground, should be borne in mind. The aspect should, of course, be such as not to cause direct sunlight to fall upon the horse's eyes. A writer on stables says: "The aspect should be south or south-west, so that the horses face north or north-east"; but, while preserving the horses from the glare of the sun, it should be remembered that no place from which sunlight is excluded can be perfectly sweet or wholesome. Your windows should, therefore, be arranged to admit a good share of sunlight into the stable; they should yet be free from the objection before noted.

Ludicrous Stables.

The old idea that any rough shelter was good enough to put a horse in is not now held by sensible people, for the hackneyed saying, "as strong as a horse," is, like most of such sayings, only partially true, for the horse is an animal particularly susceptible to delicacy, prone to colds and many other ailments, which, seemingly trivial, may, like a cold, or chill, change a valuable hunter into a worthless roarer. To provide as far as possible against such dangers, in so far as they are liable to be caused by badly-arranged stabling, should be the aim of the architect. I don't mean to say that such luxury and expense as we often see lavished upon big stables in England are at all necessary, or even desirable. It is scarcely necessary to say that the young architect not possessing any knowledge of "the noble animal" and its requirements who happens to get a commission to design a stable, should seek the friendly counsel of some experienced friend who has actually managed a stable himself. Many valuable hints may be picked up from grooms of the older school through the medium of a modest "tip."

Materials.

As regards building materials, care should, of course, be taken that it will give a good dry house. Beyond this any good brick or stone will be equally suitable. It is not absolutely necessary to plaster the inside walls if they are pointed, and twice lime-whitened with good "stiff" lime and tallow; it makes a very good finish for a "poor man's" stable. I think the ideal finish is "Keene's" or "Adamantine" cement trowelled smooth and painted four coats. Wood sheeting should, for reasons of cleanliness, be avoided. Elaborately tiled walls are very fashionable—probably on account of their costliness, but to my mind they are a useless extravagance, and as they greatly tend to produce condensation on the walls, are best avoided, or very sparingly used.

Fresh Air.

Speaking of a tired horse in casual shelter after a hard day's run, that prince of sporting writers, Whyte Melville, says: "With thorough ventilation and plenty of coverings—old sacks, blankets,—whatever you can lay hands on—he will take no harm. Indeed, if you can keep up his circulation, there is no better restorative than the pure cold air that, in a cow-shed or outhouse, finds free admission to fill his lungs." Curious commentary on modern luxury. One of the best arranged stables, absolutely free from affectation,

that I have seen are the Royal stables at Windsor Castle. Plain and comfortable, well ventilated—perhaps not up to date, some people would say; but excellent they are.

Ventilation.

Ventilation should be ample, and simply arranged. There should, of course, be means of opening the windows. I think sashes hung as falling-in-hoppers on quadrants are better than either up and down sashes, pivot-hung or casements. But it must be remembered that grooms, especially Irish grooms (pre-eminent though they may be), cannot be depended upon to open windows. If for no other reason, then you must not only open the windows, but should provide proper inlets and outlets for fresh and vitiated air respectively. Tobin tubes or airbricks and ceiling or roof exhausts are almost as good an arrangement as can be desired.

Planning.

The planning of stables should be on the most liberal scale. There should be no awkward corners nor turns of any kind. Stalls on one side only, with a wide passage, and the entrance at the end, is the best—though there are not any serious objections to a central passage.

Drainage.

The drainage is a very important consideration. The site should be thoroughly drained, to keep the building dry. French drains or field drain pipes are useful to carry away subsoil water to a pit. The internal drains should be by means of surface channels only, no traps or gullies should be used inside. The surface of the floor should be carefully graded to proper falls, so that they can be flushed with a hose and cleaned with a stiff whalebone brush. The stall channels should join the passage channel, and be taken out through the wall some distance away.

Roofs.

For a roof covering nothing is better than good tiles, or slates well rendered. Corrugated iron is cheap and effective enough, but nasty, and is, besides, cold in winter and very hot in summer. Thatch is the exact opposite, but, sad to say, it is fast dying out in this country; moreover, it costs more to maintain, and, as some people say, harbours vermin. But its extreme picturesqueness and comfort ought to outweigh these smaller defects.

Dimensions.

As regards dimensions in planning, the following notes—chiefly extracted from the War Department regulations—will probably be found useful. They should be regarded as a minimum, because, you must recollect, a horse is a heavy and cumbersome animal within doors, and turns round with difficulty in a narrow space. It cannot be too frequently repeated that projections in any shape or form are objectionable. The smallest blemish on a horse seriously detracts from his value, and common sense tells you how easy it is for a large animal to bark himself, or even to do himself a serious injury, going through a narrow door. Counter-sunk bolts, rings, etc., should be used; projecting iron fittings are very objectionable.

War Department Stables.

Stalls should be placed against outer walls. 1,600 F.C. of air space per horse. Size of stalls for officers' chargers, 11 feet by 6 feet; size of stalls for troop horses, 11 feet by 5 feet 6 inches. Central passage between two rows of stalls should be 9 feet wide. Passage in rear of a single row of stalls should be 7 feet wide. Windows, containing $4\frac{1}{2}$ F.S. per horse, should be placed between each pair of stalls (*i.e.*, one window for every two stalls), and over the stalls, and raised at least 8 feet above the floor. Stables with open roofs may have continuous skylights. Windows should swing on pivots, or be hinged at bottom. Roof should be open, ventilated at ridge and eaves. The air inlets at eaves should give 144 square inches opening per stall, and continuous course of ventilating bricks is best. An air grating, or 9-inch by 3-inch perforated brick, should be placed under the mangers between the stalls, and about 18 inches from floor line, to supply fresh air to horse when lying down. Doors at end of stables to be hung sliding. Best paving is of concrete, grooved, with slope of 1 in 80 from front to rear,

and 1 in 36 from sides to centre. Passage in rear of stalls to slope 1 in 40 to surface channel behind stalls, and to be similarly paved. Stables should be drained by surface channels only, with a shallow cross-section, and carried through the wall for at least 12 feet from building before discharging in a gully trap. Loose boxes should be 17 inches by 12 inches, giving 2,500 F.C. per horse. Dung pits should hold 5 feet cube per horse, cemented inside.

Comment Thereon.

Most of these regulations are excellent and practical, but in many respects cavalry requirements, like cavalry riding, differs from civilian form. The following are some comments:—A 7-ft. single stall passage is not wide enough; 8 feet, or even 9 feet, is desirable.

Doors.

On the whole, I think sliding doors are the best, though most civilians favour doors hinged in two heights (*i.e.*, "half doors"). They should hinge to open out, and should be 5 or 6 feet wide. The frame should not have any sharp angles. The door itself should be of 2½-inch red deal, grooved; jointed framings, fitted with 1-inch sheeting, and generally of extra strong build. The objection to sliding doors is that grooms won't take the trouble to fully open them, and they thus narrow the opening for horses passing in or out. Hinged doors, on the other hand, may strike a valuable animal, and do serious damage. Transome sashes (hoppers) are an advantage in either case. Three feet six inches (an entirely too narrow opening) is common. Oak boarding to the bottom rail is desirable. Six feet is a very narrow stall for a good horse; 6 feet 6 inches is better, or up to 13 feet by 8 feet in good stables. The 5 feet 6 inch width, I take it, is, in cases where sling bales are used, an abominable practice, only tolerable for troop horses which are used to being picketted together.

Concrete.

Concrete is a very bad paving for a stable floor. It is very trying to horses, and, some authorities say, permanently injures their hocks. (Anyone who has ever tried to dance on a concrete floor will appreciate this.) Blue brick, corrugated or grooved, stable paving, or yellow-tinted adman-tine clinkers, chamfered on two edges, make good floors. The passage may be laid herring-bone fashion.

Ventilators.

A timber-framed exhaust ventilator, carried up over ridge as a turret, is most useful for ventilation; it may be brought right through a loft.

Slope to Stalls

The best practice is to make the stall 13 feet, and in that length to give a fall of 5½ inches. The late Duke of Beaufort held that this slope was not necessary to a horse's comfort, but he was the only authority of that opinion.

Sick Box.

A sick box is a necessary adjunct to every large stable. It is important to have facilities for promptly isolating any animal suspected of having any infectious ailment. It should be separated from the stable by solid walls, or, better still, detached, and should contain one or more roomy loose boxes. The construction should be of an antiseptic character, the walls and ceiling being plastered in Keene's cement and painted. The entrance ought to be directly from the open.

Loose Boxes.

There should be as large a proportion of loose boxes as possible. The War Department standard of 17 feet by 12 feet is hardly big enough. Better make them 18 feet by 13 feet, or 17 feet by 13 feet will do. Some of the stall partitions now sold are made so that two stalls may be thrown into one, forming a box.

Fittings.

Stall fittings are best of iron. An excellent range of patterns is made by Messrs. Musgrave and Co., of St. Ann's Ironworks, Belfast. The stall divisions and box enclosures can also be had to correspond, but personally I should prefer iron mangers, and timber partitions either of oak or pitch pine; deal is too soft. The mangers should be chosen with the greatest care. Some of the metal goods in the market are very objectionable by reason of unsuitable shape and sharp angles. The arrises should be rounded, as a fretful,

nervous horse may easily injure himself against these metal fittings if they are of bad pattern. Wood mangers and racks are quite out of date, and are also said to tend towards making horses crib biters.

Water-pots.

A great many people advocate the use of enamelled iron water-pots in order that the horse may always have a drink "at hand." Now this is quite wrong. In the first place it is only in a good racing stable that you would ever get the pots kept constantly clean, and a horse is a very dainty animal. But besides this, a horse should not have water always before him. This is very elementary. But to add authority to my statement, I will quote a few words of the author of "Pink and Scarlet," Lieutenant-Colonel Alderson, well-known in Dublin, and who has since won distinction as one of the best mounted infantry leaders in South Africa. He says:—"Horses should *never* be watered directly after being fed" and, again, he says it is "dangerous" to water a horse at certain times. A constantly cleaned and changed pail is the proper thing, and for this there is also Colonel Alderson's authority.

ro nwork Gene

Where in contact with urine or wet this should be cast iron, elsewhere wrought iron.

Length of Stall Division.

The length of the stall division, about 10 feet, and the height at the heel posts 4 feet 8 inches, and it should be ramped up to 7 feet at the head. The unramped divisions between boxes ought to have a head board about 3 feet 6 inches to 4 feet 6 inches long, and sufficiently high to prevent the horses seeing one another if they are racked up.

What Fittings are Wanted.

An ordinary stall needs one stall manger, combining enamelled iron, feeding trough, and a wrought iron hay rack. The manger should be about 3 feet 6 inches over the floor. One bronze metal racking ring and galvanised chain; two dressing rings are also desired by some people, as well as two pillar rings. A name plate should be provided. Similar fittings, but of different pattern, to be used in the loose box.

Washing Box.

A washing box for washing horses under cover is usually simply a shed roof, and fitted with a racking ring; floor of concrete or brick (not corrugated).

Forage Lofts.

Hay lofts should never be in detached buildings away from the stable. There is nothing more comfortless than wet fodder, and wet it will be if it has to be carried across a big yard in a downpour. For sake of economy in space the loft may be over the stables, but it is better alongside, so that the buildings need be only one storey in height. Loft doors should be 3 feet 6 inches or 4 feet wide, hung folding. A small crane over for hoisting is sometimes found useful in upper floor lofts.

Water Supply.

If the cold water supply is by means of a service pipe which has to be carried any distance in the open, make sure that it is well protected against frost. The stoppage of the water supply to a stable is a most disastrous thing.

Heating.

For big stables a small bore system of pipes is simplest and cheapest. The pipes should run along the passage wall at a high level over the heads of the windows. Put a draw-off cock to system for a hot water supply. Don't allow the heating to be more than is absolutely necessary. Writing on this subject, Colonel Alderson says—"Few things are worse for a horse than a hot and close stable. Nothing makes him so likely to catch cold." 50 degs. to 60 degs. Fahrenheit is the right temperature.

Harness Room.

The harness room should, of course, be on the ground floor, and of ample size; good light and ventilation, and efficient heating. The walls may be roughly sheeted from about 2 feet 6 inches over the ground for a height of, say, 4 feet 6 inches, and covered with baize, and having the usual fittings to receive harness, saddles, etc. In small establishments where there is no regular heating system nothing is bet-

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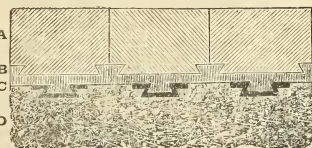
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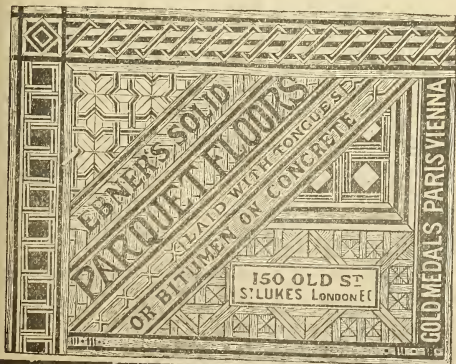
ON

CONCRETE.



A Wood; B Bitumen; C Iron Channel; D Concrete

JOS. F. EBNER, 150 OLD STREET, ST. LUKES, LONDON, E.C.



ter than one of Musgrave's "Norman" stoves. In fact, whether there is a heating system or not there should be either a stove or fireplace in the harness room. Space forbids our particularising the harness room fittings, but such make as Musgrave and Co. stock the necessary equipment of ventilating brackets for ladies' and gentlemen's saddles, and for double and single harness, saddle drier, whip racks, harness cleaning hooks, etc.

Bi-Cr. se.

The bit case may be about 4 feet by 4 feet 6 inches by 6 ft. deep, with brass hinges and locks, lined with dark cloth, and having at least a dozen brass bit and curb hooks, and enclosed with glass doors.

Cleaning Room.

As only dry cleaning should be done in a harness room it is desirable to provide a separate cleaning room fitted with iron brackets, brush and soap, drainers, a leathered harness cleaning hook, a wrought-iron cleaning horse, etc. The floor may be of concrete, brick, or tiled, the walls should be plastered and painted.

The Use of Concrete.

A word in regard to the use of concrete for walls of stables. Gravel concrete makes a very cold wall. Therefore let them be much thicker than is requisite for stability. Breeze concrete is better than gravel. Concrete walls need to be cemented or dashed outside and plastered outside if you wish them to be air-tight, though I don't think that necessary.

A Useful Book.

Some useful information may be derived from a perusal of Captain Horace Hayes' book on stable management.

General.

Remember, the great thing about a good stable is cleanliness and efficient ventilation. Planning should be directed to this end. No obscure corners or crevices. Internal rounded angles and bull-nosed quoins to brickwork are desirable. No shelves, cupboards, or lockers of any kind. Leave no excuse for dirt.

Most of these few notes are chiefly applicable to big establishments, but the same principles apply to a little two-stall stable, and there is no reason why the one should not, in its own way, be as perfectly arranged as the other.

— : O : —

A NEW CASEMENT STAY.



The well-known firm of Messrs. Colledge and Bridgen, of the Midland Lock Works,

Wolverhampton announce that they have put upon the market a new Casement Stay, known as the "New Century" Patent Stay. Its price is moderate, ranging from 3s. 9d. to 6s. 8d. per dozen for Steel, and 15s. to 35s. per dozen for Brass. This pattern has the merit of simplicity, a fact which should commend itself to Architects and Builders, who know the difficulty of getting a good, strong simple Stay.

WINDOW BLINDS.

Venetian Cloth and Wire Blinds of every description, also Alterations, Renewals, and Repairs in the Best Style and at Moderate Prices.

Cloth and Wire Blinds Artistically Lettered and Ornamented.

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1859.

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No. 4297.

SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp. Carpenter and Joiner.

(Continued.)

Framed Partitions.

Between stairs and water closet, etc., to have heads and sill, 4" x 3", and studs 4" x 2", and the partitions between bath, lavatory, and water closet to have heads and sills 3" x 2", and studs 3" x 2", all of fir, with sub-heads to door openings, and bridging, as required, about 4 feet apart.

Herringbone Strutting.

The joists to rooms on first floor to have a row of 2" x 2" herringbone strutting. To be constructed of fir in accordance with the drawings; rafters to be 2" x 4½"; collars, 1½" x 4½"; ceiling joists, 2" x 7"; suspenders, 1" x 4"; valley, 2" x 7", and ridge 1½" x 7".

Roofs.

The floor, ceiling, joists, and rafters to be properly trimmed, where necessary, to hearths stairs, manholes, and chimneys.

Trimmers.

The trimmers to be 1" thicker than the joists or rafters for every joist or rafter they may have to carry.

Main trimmers to be tenoned through and keyed. All joists and rafters supported by trimmers are to have tenons passing through trimmers.

Porch Roof.

To be as shown in Section C. D., forming lead flat, with fir rafters, 2" x 6", cut tapering to give fall of 1½" to flat, and covered with 1" deal close-jointed boarding properly dressed for lead. Form gutter as shown with 1" deal properly wrought for lead, and with proper cesspool at one end.

Bay Window Roof

To have fir rafters and hips, 2" x 6", cut tapering 1½", to give fall to flat, and covered with 1" deal boarding laid close joint and dressed for lead.

Rolls to Lead Flats.

The lead flat to roof of porch and bay window to have 2" deal wrought and rounded roll, as shown on drawing.

Boarding to Main Roof.

To be 1" deal rough and edges shot, laid in batten widths.

Valley Boards.

Provide and fix 1" deal valley board, 4½" wide, bevelled both edges.

Tilting Fillets.

Fix to eaves where required deal tilting fillet, feather edge, 4½" wide, and ¾" average thickness, and to valleys, chimneys, and where else required, fillets 2½" x ¾" average.

Fascia and Soffit to Eaves.

Provide and fix, as shown in the drawings, 1" deal wrought, beaded and ploughed and tongued, fascia and soffit, stopped at brick blocking to gables.

Manhole in Partition over Stairs.

The top edge of fascia to be splayed to tilt. Trim for and form manhole in partition for access to cistern 2' 6" square in clear, and fix round same 1½" deal wrought rebated and framed lining, 4½" wide, with ¾" deal wrought and framed grounds, 4½" wide, splayed for plaster, and 1" x 2" deal moulding, fixed as architrave on outside only of opening.

The opening to have 1½" deal-framed door, in one panel, moulded on outside, and flat and square on inside, hung with one pair of 2" brass butts, and fastened with 1½" brass knob turn buckle.

Safe to Cistern.

To be 1" deal, rough, ploughed, and tongued, and dressed for lead with rim formed with 1" x 2" filler, fixed round same, dove-tailed at angles.

To have two oak bearers 4" x 2" wrought, V notched, about 4" apart, on the under edge to allow any water to flow through to the outlet.

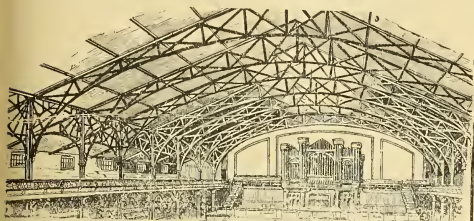
Framing Generally.

Framed doors, sashes, and frames, and all similar framing to be prepared as soon as practicable after commencing the work, and then put by until required for fixing, when, in case of doors and similar framing, they are to be glued and wedged together.

All joiner's and other work to be delivered on the site without being primed, and to be inspected and approved before being painted.

In taking dimensions 1-16" will be allowed for each wrought face on all wood work.

(To be continued.)

CONSTRUCTIONAL**IRON WORK.****ROOFS.**

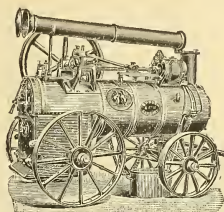
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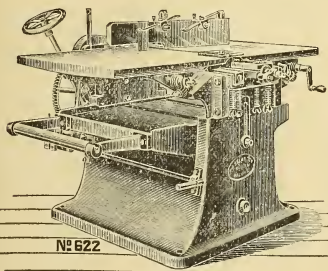
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Canal Works, HALIFAX, YORKS.

THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.

BY BARRY PARKER AND RAYMOND UNWIN.

A Lecture delivered before the Society of Architects, and Published in the Official Magazine of the London Society.

(Continued.)

The Hall.

The hall or entertaining-room being intended for less constant as well as more formal use, takes a somewhat simpler form. Placed at the west corner with windows south-west and north-west it gets all the sunshine during the afternoon and evening, when it is most occupied. It is placed so as to be immediately accessible from the entrance, and opens on to the balcony with folding doors and window. The fire is placed in an angle contrived under the stairs and half landing, an arch being used in this case to carry the chimney stack and form the recess. The flue from the fire is brought over on to the arch by means of a copper hood. A little bay partly in the porch lights this angle. The porch is also arranged under the stair landing, with a seat for a messenger under the stairs. A coal-box and shoe cupboard complete the utilisation of the space under the stairs, which is thus not only made to add to the convenience, but also to contribute something to the interest of both the room and the porch.

The study.

Adjacent to the entrance is the small sanctum. Here, again, something is taken off the square room, which, while improving it rather than otherwise by giving a recess for desk and pigeon holes, enables us to have a small vestibule with cupboard for visitors' hats and cloaks. Sample cupboards and safe occupy the south-east wall, while a comfortable corner between fire and window is left clear for easy chair and reading stand.

The Kitchen, etc.

Handy to the entrance and to this room is the main coat cupboard and the lavatory, from which a side door leads to the stable yard, while the butler's pantry completes this north-east side of the little court. Beyond this and behind the living room, having its fireplace at the back of the living-room fireplace, is placed the kitchen. It occupies the east corner of the house, and has its main window to the north-east, the right aspect for a kitchen. There is a small window to the south-east, to light the range and make a comfortable place for sewing or reading. One corner between fire and window should always be kept free from doors in a kitchen, so that there may be a place to sit in, and it makes a more comfortable kitchen still where it is possible to collect the doors on one side only. Here an archway, closed by a heavy curtain when work is done, leads to the scullery, cellar, larder, and back door. A working dresser under the main window, fitted with drawers and flour bin, a cupboard and plate-rack slightly recessed on the south-east wall, and cupboards each side the fireplace constitute the chief fittings, and in the scullery there is a special cupboard, with slate shelves for saucepans.

The Larder.

The larder has its window in the back porch, to get a north aspect, while thorough ventilation is secured by an opening on the south-east up under the eaves where the sun cannot reach it. The cellar was added after the preliminary plans were made, the scullery being re-arranged to allow of it. This latter is made to obstruct as little as possible the squint window in the living-room angle, and at the same time gets a south window, which, as there is no fireplace, is a good aspect for it.

The Stairs.

The staircase rises from the corridor, and as it is accessible from all parts without passing the doors of the reception rooms, a back staircase is not needed. Where economy is a consideration the back staircase is one of the first things which may be dispensed with, for it adds so little real comfort in proportion to its cost.

The Bedroom Floor

The bedroom plan follows pretty closely the ground plan, the bedrooms also leading off a corridor round the inner court. All four bedrooms are arranged so that in addition to being convenient as bedrooms, they have at least a corner near the fire comfortable to sit in. In small houses to regard a bedroom as a sleeping room only is a mistake. The accommodation is greatly increased when each member of the household can use his or her bedroom as a private den also. The balcony is repeated on the first floor—the bedrooms being as serviceable without the space it occupies—and by reason of the parapet and overhanging eaves, it is even more sheltered than that on the ground floor, and makes it possible in two bedrooms to sleep practically in the open air in almost all weathers. It has special value, too, as an addition to the west room, which is designed for the boy's bedroom and study. Here the bed fits in a deep recess out of the way; a washstand is contrived in the sill of the window of the same recess, which is slightly bayed to give the needful room, and a curtain may be drawn across, cutting off all the special bedroom appliances, so leaving a good comfortable study.

The Central Court or Area.

The central court enables the corridor to have opening windows to three aspects, so that some can be open whatever the direction of the wind; it also makes it possible to cut off the bathroom, housemaid's closet, and w.c. by means of a lobby having two little windows on to the court. A window is put to bring the south-east sun into bedroom No. 3, the wide sill of which in the rather narrow room may be used for a dressing table. As this chamber is specially well placed for being isolated in case of sickness, it is supplied with a hob grate. In bedroom No. 4 an over-hanging window recess is carried out on the joists, to avoid the want of comfort which one always feels on the window side of a room when the door opens on to it right in the corner as here; while the window itself is slightly bayed to add to the outlook. This room has also a little window on to the court to bring in morning sun, and thus all the bedrooms get through ventilation and plenty of sunshine.

General Treatment.

Of the treatment of the rooms little need be said. The recesses by the chimney breasts are fitted with cupboards and book shelves, which are designed to include simple framings or mantels for the fire-places, and the cornices of which are arranged to match the cornice over doors and windows, and to carry line with a picture rail running round the room. Wall papers or other decorations stop at this rail, all above being taken in with the ceiling. This arrangement enables the ceiling to be broken up with the slopes of the low roofs without giving the ugly odds and ends of papered wall, which really are the only unpleasant feature about a ceiling broken up in that way.

Plan and Elevation Work Together

During the whole of the planning the elevations are, of course, kept in view, and the block design carried away in the mind from the site constantly exerts a modifying influence. The difficulty usually is to maintain sufficient simplicity; so many features are suggested by little conveniences of planning that one has often to cut them out, not to seek for them merely for the sake of effect.

This plan which we have just considered, representing, perhaps, rather a large house to be classed as "small," does not quite illustrate one point to which we attach very great importance in the designing of small houses. The second plan now shown gives me an opportunity of referring to this. Here a special effort was made to obtain one room giving some sense of space in a house not large enough to contain several large rooms. In all small houses much must be sacrificed, but it seems to us to be indefinitely less of a sacrifice to reduce the number of rooms than it is to reduce the size of them all until they are mere boxes. In every small house it should, we think, be a first consideration to secure one room large enough to afford some opportunity for interest being worked into the room itself, and to allow of some comfort and dignity in the life of its occupants.

(To be continued.)

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COMPETITION.

Work.	For Whom.	Particulars from	Last date.
Additions to Ennis District Lunatic Asylum, £50 prem	Committee of Management	Mr. John Enright, Ennis.	1st June

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
Residence, Delgany Co., Dublin	T. Lawless, Esq., J.P., Delgany	R. M. Butler, Architect, Dawson Chambers, Dublin	No date
New Buildings North Dublin Union	Board of Guardians	Clerk of Union	27th March
New Premises, Whitehead, Co. Antrim	Rev. J. Coulter, The Manse, Newtown-burton	Mr. J. Russell, Architect, 22 Waring St., Belfast	30th March
Teachers' Residence, Lisnaska	Board of Guardians	Mr. W. Calvert, Clerk to the Board, Armagh	31st March
Dispensary and Residence, Richhill, Co. Armagh	Urban Council	Mr. W. Eccles, Town Hall, Coleraine	1st April
Additions to Town Hall, Coleraine	Coleridge Rural District Council No. 1	Mr. F. Shortt, Clerk of the Council	4th April
Two Cottages, Leixlip	Committee of Management	Messrs. Carroll and Batchelor, Architects, Merion Square, Dublin	12th April
Additions to Asylum, Limerick	Committee of Management	Mr. James Young, Clerk of Asylum	10th April
Furniture, &c., Ballinasloe Asylum	Committee of Management		16th April

TENDERS.

HOWTH.—For execution of Fourteen Labourers' Cottages, at Howth, North Dublin. W. Lacy, Howth, accepted, £1,890.
LURGAN.—For Construction of a New Sewer on the Lough Road, Lurgan—J. McNally, £919; B. Stafford, £931; W. Geddis, £797; J. Graham & Sons, £705 13s.; S. McIlwaine, Lurgan (accepted) £658.
LARNE.—For Improvements in connection with the Fever Hospital and Main Buildings, Larne—H. Girvan, Main Road, Larne (accepted) £62 7. 6d.
RATHDRUM.—For construction of the Aughrim Waterworks, Rathdrum. Baird (accepted) £74 2s. 6d.
DUNGARVAN.—For taking down and rebuilding 135 feet of the Quay Wall, Dungarvan—D. McGrath and Sons, Dungarvan (accepted), £387.
DONEGAL.—For Renovating Licensed Premises at Donegal, for Mr. M. Flood, Londonderry—Jas. P. McGrath, C.E., Architect, 28 Carlisle Road, Derry.
LIMERICK.—New Wing, Mount St. Aphonsus, Limerick, for the Redeptorist Fathers. Mr. G. C. Ashlin, Architect, Dublin; Mr. D. W. Morris, Surveyor, Dublin; Mr. P. Kennedy, Builder, Limerick, accepted.
LIMERICK.—General Offices and Stores, Limerick, for the Irish Co-operative Agency, Ltd.; Brian E. F. Sheehy, Esq., C.E., Architect, 50 George's street, Limerick. McElough, Colonee Street, Limerick, £2,000; John Kenny, 25 Richmond Street, Limerick, £2,530 18s. 10d.; Daniel Sullivan, 25 Frederick Street, Limerick £2,335 os. 0d.; P. Kennedy, Military Road, £2,504 6s. 8d.

ENNIS DISTRICT LUNATIC ASYLUM.
COMPETITION PLANS.

Plans will be received in competition by the Committee of Management on or before the 10th June, 1901, from competent Irish Architects practising in Ireland, for additions and alterations to the Ennis District Lunatic Asylum, Co. Clare. Plans of the existing buildings can be seen on application to the Resident Medical Superintendent.

The plans to be sent in under motto, and a sealed letter should accompany each set of plans, bearing the name and address of the author of the design. Plans to be drawn to a scale of sixteen feet to one inch.

1. An estimate of the cost of the proposed new buildings, setting out the cube of the buildings, with the price at which it is calculated, will be required.

The Committee may appoint an Assessor to adjudicate on the Plans submitted in competition. A premium of £50 will be paid to the author of the design placed first, but they do not bind themselves to adopt the design placed first by the Assessor, or any design, and it does not necessarily follow that the author of the design placed first will be employed to carry out the work.

By Order,

JOHN ENRIGHT, Clerk of Asylum.

26th February, 1901.

TO BUILDERS.

The Coleraine Urban District Council invite Tenders for Building an Extension and making Alterations to the Town Hall, Coleraine, according to Plans and Specification, to be seen at the Office of the Town Surveyor, from whom Bills of Quantities and Forms of Tender may be obtained on receipt of £1 deposit, which will be returned when a *bona-fide* Tender has been sent in.

Proposals, endorsed "Tender for Town Hall," to be lodged with me not later than Thursday, the 4th day of April, 1901.

WILLIAM ECCLES,

Clerk to the Council.

Town Hall, Coleraine,
14th March, 1901.

LIMERICK DISTRICT LUNATIC ASYLUM
TO ENGINEERING CONTRACTORS.

The Committee of Management of the above Asylum at their meeting to be held on Wednesday, April 10th, 1901, will receive Tenders from Engineering Contractors for Laundry Fittings, Cooking Appliances, Plumbing, and Engineering Work in connection with the Administration Block, in accordance with the drawings and specifications prepared by Messrs. Carroll, Batchelor, and Browne, Joint Architects.

The Drawings and Specifications may be seen at the office of Messrs. Carroll and Batchelor, 86 Merriam-square, S., Dublin, and at Mr. O'Malley's, Glentworth-street, Limerick, from whom copies of the Bill of Quantities may be obtained on payment of a fee of three guineas, which will be returned on receipt of a *bona-fide* Tender.

All Tenders should be properly endorsed, in sealed envelopes, addressed to the Medical Superintendent, and lodged with him before 11 o'clock, Wednesday, April 10th, 1901. The Committee do not bind themselves to accept the lowest or any Tender.

LIMERICK DISTRICT LUNATIC ASYLUM.
TO BUILDERS.

The Committee of Management of the above Asylum, at their meeting to be held on Wednesday, 10th April, 1901, will receive Tenders from Building Contractors for alterations and additions to the Administration Block, comprising New Stores, Laundry, Kitchen, and Offices, in accordance with the drawings and specifications prepared by Messrs. Carroll, Batchelor, and Browne, Joint Architects. The drawings and specifications may be seen at the office of Messrs. Carroll and Batchelor, 86 Merriam-square, S., Dublin, or at Mr. O'Malley's, Glentworth-street, Limerick, from whom copy of Bill of Quantities may be obtained on payment of fee of three guineas, which will be returned on receipt of a *bona fide* Tender. Tenders should be properly endorsed, in sealed envelopes, addressed to the Medical Superintendent, and lodged with him before 11 o'clock on Wednesday, 10th April, 1901. The Committee do not bind themselves to accept the lowest or any Tender.

SAND.—About 500 loads of Liffey Sand for Sale; suitable for Building purposes. Apply—

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No. 990—Vol. XLIII.

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APRIL 10, 1901.

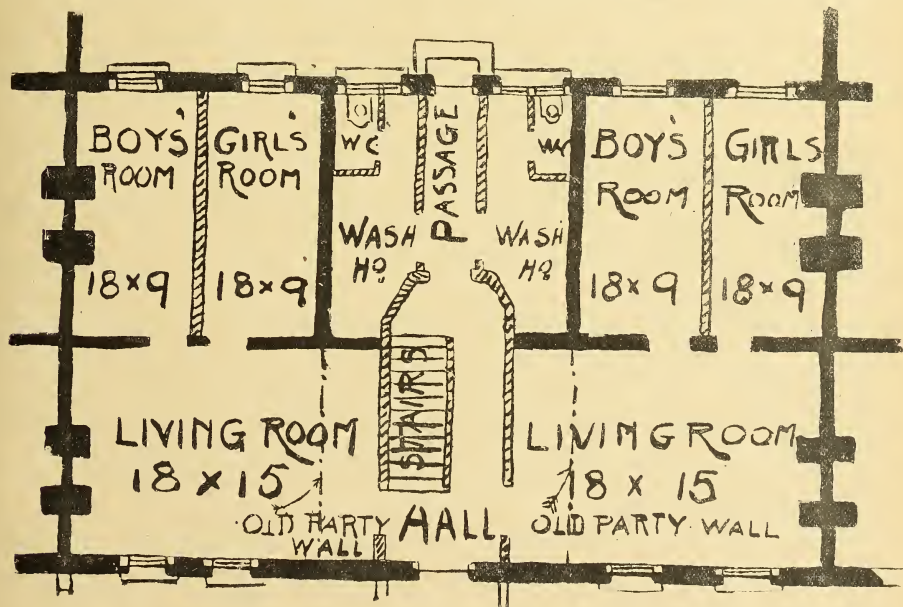
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TOPICAL TOUCHES.

Speaking of the proposed "Queen Victoria Memorial" in London, our esteemed contemporary, the *Builders' Journal*, remarks: "We do not desire a repetition of the Albert Memorial, where the gold was plastered on in order to use up the funds which had to be spent." Truth, indeed! as everyone will say who has observed the over-loaded and bilious effect of an undoubtedly great design by a great architect.

Mr. J. T. Rea, F.S.I., M.R.I.A.I., Surveyor, War Department, Curragh, well known to all our readers, is now contributing a series of valuable articles on the all-important subject of estimating and prices to our contemporary, the *Building News*. These articles are the most complete elucidation of the subject ever written, and occupied the author three years to write them, and ten years to collect the information. Mr. Rea is an Irishman, and served his pupilage with the noted firm of Young and Mackenzie, architects and civil engineers, of Belfast.



"IN DARKEST DUBLIN."

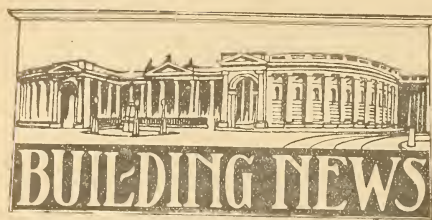
A suggestion for the improvement of old tenement houses. The houses to be dealt with in blocks of three, and dealt with so as to give two separate tenements on each floor. From a sketch by Mr. WALTER G. DOOLIN, M.A., Architect.
Block kindly lent by *Evening Herald*.

The Angel Hotel on Inns Quay, Dublin, is advertised for sale. It had long since seen its best days. Though it could not boast the historic traditions of "Morrison's," it had a history of its own, and is associated with memories of many leading lights and wits of a legal world that has disappeared.

In our last issue we were in error in stating that the Quantities of the Victoria Eye and Ear Hospital, Dublin, were taken out by Messrs. Beckett and Metcalfe. Messrs. Patterson and Kempster were the surveyors.

A "red tape" story is told at the expense of the *Herald's* office. An application was sent from a London paper for a Press ticket admitting to Victoria Station on the occasion of the Queen's funeral. The reply was to the effect that, after carefully consulting the precedents of 1837, the authorities could find none which justified them in allowing the Press within Victoria Station. It is only fair to add that precedents did not prevent representatives of the Press from gaining admission to the station. What price the Irish "Boord" of Works now?—Eh!

Canon Trevor Owen, F.S.A., the well-known archaeologist, has been appointed to the Vicarage of Bodelwyddan, which has the distinction of possessing the most beautiful church in the Principality. It is constructed internally of almost every known species of marble, but is chiefly remarkable for the lovely font, representing a shell upborne by two young girls—the models being the daughters of the local squire—which has been deftly fashioned out of a single block of Carrara. This magnificent edifice, which is alleged to have cost nearly £100,000, was erected as a memorial to her husband by the late Lady Willoughby de Broke.



Belfast.—The Improvement Committee of the Council of this borough met at the Town Hall recently, under the presidency of Councillor Macartney. Tenders for the construction of a storm overflow on the sewer in Ormeau Park were considered, and that of Mr. W. H. Campbell was accepted. Permission was granted for the erection of the Queen's statue in front of the new City Hall, and the surveyor (Mr. Bretland) was instructed to make arrangements regarding the foundations. The surveyor was also instructed to inform the owners of property in the back street on the north side of St. Kilda-street, Wrayburn-road, and portion of Mountcollyer-avenue, that unless they proceeded in one month to complete those streets, the Council would make compulsory orders therefor. The sub-committee appointed at the last meeting regarding the trees in front of the new Presbyterian Church, Malone-road, erected by the Fishewick congregation, recommended that the trees be removed, the road widened, and other trees planted next season, and the recommendation was agreed to.

PROPOSED APPLICATION FOR £95,000.—Mr. P. C. Cowan, M. Inst. C.E., Chief Engineering Inspector of the Local Government Board, sat in the Council Chamber of the Town Hall recently, and held an inquiry into an application made by the Corporation to the Board for their sanction to a loan of £95,000 for the purpose of carrying out works in connection with the electric lighting of the county borough. It was necessary to hold the enquiry, as the sum applied for, with the balance of the outstanding loans contracted by the Council under the Sanitary Acts and the Public Health (Ireland) Act, 1878, would exceed the assessable value for one year of the premises within the district, in respect of which such money may be borrowed. Evidence was given, and the Inspector promised to forward it at once to the Local Government Board, who would give their decision in a week or so.

Ballaghaderreen.—The contract for the spire of this church has been let to Mr. Clarence, of Ballisodare. Mr. W. H. Byrne is the architect.

Clonmel.—It is very doubtful if the governors of the asylum will carry out the sanitary works for which Mr. Hackett, the County Surveyor, recently prepared plans. The estimated cost is £5,200.

Dalkey.—**SMALL DWELLINGS ACT.**—Councillor Maxwell moved a resolution to the effect that the Urban District of Dalkey, a district containing a population of less than 5,000, do, in pursuance of Section 9 of the Small Dwellings Act (63 and 64 Vic., cap. 44), requisition the Dublin County Council to give their consent to Dalkey Urban Council becoming the local authority for the purpose of applying the provisions of the aforesaid Act in the urban district of Dalkey to the exclusion of any other authority.

Dingle.—New schools for the Sisters of Mercy are to be built at Dingle. Mr. W. G. Doolin, M.A., is the architect.

Dungarvan.—The Dungarvan R.D.C. propose to construct a new waterworks to supply Ballinacourty.

Dublin.—The contract for additions to Messrs. Beverley, Smyth and Co.'s premises has been let to Mr. Jas. Brien, Builder. The architect is Mr. R. M. Butler.

Kildare.—The directors of the Hibernian Bank will to-morrow (11th inst.) receive tenders for the new bank house at Kildare, to be built from the designs of Mr. F. Bergin, B.E. Kildare.

Larne.—On Tuesday evening the first of two pioneer lectures on Technical education was given in the M'Garel Town Hall, Larne, by Mr. William Gray, M.R.I.A., whose subject was "Technical Instruction: Its methods, Progress, and Utility."

Limerick.—Mr. R. P. O'Connor, T.C.; Mr. T. Donnellan, T.C.; Mr. M. M'Inery, President of the Congregated Trades, and Mr. C. Jefcoat, Secretary of the Technical Education Committee, left Limerick the other evening for England. They will visit the Technical Schools in Birmingham, Manchester, Burslem, and Bolton for the purpose of seeing for themselves the working of Technical Classes in these centres, and obtaining information which will be of great advantage in connection with the formulation of a scheme in Limerick. The four gentlemen named were appointed as a deputation at the meeting of the Limerick Technical Education Committee a few weeks ago. It is likely they will meet the Waterford deputation in their itinerary.

Maryboro'.—The Committee of Management of the District Lunatic Asylum will to-day receive applications for the post of architect to the Asylum Board.

Rathdown.—**HOSPITAL FOR CONSUMPTIVES.**—The report of a special committee, which was appointed to inquire into the accommodation existing with regard to patients suffering from tuberculosis, consumption, or such diseases, was submitted, and it contained a recommendation for the erection of a separate structure for the treatment of such patients, and directed that it should be capable of accommodating at least 24 patients, 12 male and 12 female.

The Local Government Board have at length issued the Provisional Order, sanctioning the scheme under the Labourers' Acts. It is a year and a half since the petition was lodged. The Union is the richest in Ireland, yet from first to last but six cottages have ever been built.

Sligo.—**THE NEW POST OFFICE.**—An animated discussion took place regarding the erection of the above building, and the following resolution was ultimately unanimously passed in reference to same, and a copy was ordered to be forwarded to the Irish Board of Works and to the local Press. Resolved—"That we, the members of the Sligo United Trades Council, learn with dismay that Messrs. W. and J. Stuart, of Belfast, are likely to supersede Mr. Williams as contractors for the new Crown post office in this town; we beg to point out to the Board of Works that the firm referred to are at variance with legitimate labour in Belfast since May, 1900, and that their joinery work is at present executed by 'blackleg' labour in that city; we would urge on the Board of Works the desirability of confining the contract (if possible) to a local firm, as if Messrs. Stuart succeed in securing it we believe they would have the greater portion of the joinery done by their 'blackleg' labour and transmitted to Sligo which would, we consider, be a violation of the Fair Wages Resolution and a source of continual irritation during the erection of the building."

Wexford.—The Wexford Guardians and the R. D. Council have from first to last built over 400 labourers' cottages, at a cost of £43,000.

Messrs. JONES and CAMPBELL OF TARWOOD FOUNDRY, CARBERT, STIRLINGSHIRE.

This well-known firm are now engaged upon a big order in connection with the supply of ranges for the London County Council; they have also lately executed the orders of some of the most important Corporations of Scotland. One of their specialities is the "Roberts Kitchener," a strong, well-made pattern at a low price (55s. to 60s.) very suitable for the small suburban house. A very neat "play" of words, as well as a good article. The works of this firm are very extensive. Quite recently the British Journal of Commerce devoted a special article to an illustrated description thereof. With such facilities, it is not a matter of surprise to note that their "Rosebery" pattern has lately been extensively used in Pretoria and Johannesburg, though doubtless the "Roberts Kitchener" will soon be as popular there among the Boers as well as amongst the Britishers, as the combination from which it derives its name is amongst the British element. The "Ossian" and "Hibernian" are exceedingly good patterns also.

BOOKS RECEIVED.

THE PRINCIPLES OF PLANNING. By Percy L. Marks, Architect. London: B. T. Batsford, 94, High Holborn, W.C. Price 6s., net.

It is now a long time since any good work on the general principles of planning has been published. The planning of particular types of buildings has, no doubt, from time to time been exhaustively dealt with, but not on broad general lines. For this reason Mr. Marks' book is useful and interesting. During the past twenty years planning *per se* has made such vast strides, and the building papers have afforded us so much food for reflection and study that it is well that someone should garner and serve up in handy form a selection of the more notable types. Generally speaking, during this period the science of planning—the economy of space—has been reduced almost to the proportions of an exact science, and has also become so exceedingly specialised that no one can hope to excel in every branch. The book is freely illustrated, and some of the plans given are by the most notable architects of the century. The only criticism we can find to make is that the project is a rather ambitious one to compass within the limits of a small handbook. For instance, in no branch has progress been so notable as in the case of the small house, yet domestic work can hardly be said to be well represented. So, too, in regard to modern church planning—great as Sir G. G. Scott's achievements were—church planning has changed, for well or ill, we say not, since his day. The congregational consideration dominates nearly all before it—in town churches at least. Still the book is a capital one for study of general principles, and the author's letterpress is excellent.

A PRACTICAL TREATISE UPON STEAM-HEATING.

By Frederick Dye, M.R.I. London: E. and F. H. Spon. 1901. Price, 10s., nett.

The problem of heating has, in more senses than one, become "a burning question," consequently any contribution to the literature of the subject is valuable. We have no reliable handy text-book on the subject of "Steam-heating," so Mr Dye's book is the more useful.

It is always a very debatable point in a new building—what is the most suitable and economical system to adopt, hot water or hot air (with or without radiators), or steam. Mr. Dye gives us not only the details of the principles of steam-heating, but affords us many illustrations of the reasons, which may guide us in the selection of the system.

Steam-heating has not been very generally adopted either in England or Ireland, but in America it is a popular mode of heating, and its use is, both at home and abroad, decidedly on the increase.

Mr. Dye, however, does not very greatly help us to arrive at any hard-and-fast rule as to the suitability or otherwise of steam-heating for particular classes of buildings, but with this exception he tells us nearly all that is to be said upon the subject. Steam-heating is still hardly likely to prove entirely popular for smaller buildings, but for factories, and such like large places—particularly where exhaust steam is available, it has undoubtedly many advantages to recommend it, and is, moreover, economical in such cases. The chapter, "Designs of Steam-heating Apparatus," is a very useful and practical one. Steam cooking, too, has made great strides, and is carefully explained. The illustrations are clear and plentiful, and the work generally is a valuable addition to the technical library.

INVESTMENTS IN HOUSES AND LANDS—With

Chapters on Leases, Mortgages, and Building Societies. By R. Denny Urrin, Barrister-at-Law. London: Effingham Wilson, 11 Royal Exchange. 1901. Price, One Shilling, nett.

How many people would have been spared self-reproach and loss if, before plunging into investments in houses and lands, they had exercised common prudence—having the property properly examined by a qualified person, and noted of what class their prospective tenants were? The little book before us gives a mass of suitable information regarding the negotiation of such transactions, and of their legal aspect. Its price is so modest that it should command a big

sale, as the method of treatment is sound, and adapted to the ordinary intelligence of an ordinary layman. Some of the author's observations upon Irish roads, taxation, and the land question seem to an Irishman absurd.

HEALTH IN THE WORKSHOP—A Paper read before the Manchester Association of Engineers by Mr. J. D. Sutcliffe, Manchester. Published by the Sutcliffe Ventilating and Drying Company.

A most useful contribution to the literature of ventilation as applied to schools, workshops, and factories.

THE ACCOUNTS OF THE DUBLIN PORT AND DOCKS BOARD FOR 1900.

The accounts are extremely interesting, as showing a record of the trade and commerce of the Port of Dublin, and the expenditure and receipts of the Board in their management of the Port.

SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp. Carpenter and Joiner.

(Continued.)

Ironmongery. All the ironmongery is to be of strong manufacture, and to be approved before fixing. All iron articles to be jappanned and fitted with

suitable screws.

All brass articles to be fixed with brass screws.

All ward locks to have solid brass wards and all keys to have solid bows, engraved and pierced for ring, as may be directed.

Floors. The floors, white tinted Raw Sienna on plan, to be 14" pitch pine in 4½" widths, wrought related, and filleted, laid straight jointed, with splayed headings, and nailed with 3" cut floor brads.

Skirtings to The hall, sitting-room, and waiting-room, to have 1" deal moulded skirting 9" high, and **Wood Floors.** the landings, bedrooms, and kitchen, to have 1" deal tongs skirting 7" high. Bath-room, lavatory, and water closet, to have skirting similar to last, but 5" high.

All skirting, where fixed in plastered rooms, etc., to have proper backings and grounds, splayed for plaster.

The skirting in kitchen to be fixed to floors.

All skirtings to be properly scribed to floor, and to be mitred at internal and external angles, and to have all necessary returned and fair ends.

Stairs. To have 1½" treads and 1" risers of pitch-pine, the treads to have rounded nosing and to be grooved for risers and housed into wall string, the risers to be rebated to form tongue for groove, and to be also housed into wall string.

The treads and risers to be properly glued and blocked.

The strings to be 1½" deal, framed and ramped where required the inside string to be tongs moulded to match the skirting and to be housed for treads and risers, and the outside string to be cut and mitred to risers.

The treads to have returned nosing with bed moulding, and to be dovetailed for balusters.

The landing to be 1½" pitch-pine as described for floors, fixed on 2" x 7" fir beams.

The newel at foot of stairs to be 4" x 4" Honduras mahogany, turned and framed into curtail step.

The handrail to be of Honduras mahogany, 3" x 3", moulded and framed, rumped, kneed, wreathed and circular where required, morticed for balusters, and put together with all necessary hand-rail screws.

The balusters to be 1½" x 1½", deal turned, dovetailed to treads and housed into handrail.

The bottom step to be proper curtail, with riser properly glued, and blocked.

The spandril of bottom flight to be filled in with 1½" deal framed in panels, square and flat, and moulded on outside. The end to be enclosed with 1½" deal door, framed in panels, square and flat, and moulded on outside, hung with 3" wrought iron butts, and secured with 1½" brass turnbuckle, in 3" x 3" fir, wrought framed and rebated, frame, the outside post at angle to be staff beaded.

Fix to landing where required 1½" pitch pine nosing, with bead mould to match nosing of treads, and ¾" deal beaded and grooved apron lining.

The soffit of stairs and landings to be lath and plastered as described for ceilings

(To be continued.)

THE LATEST DEVELOPMENT IN ASYLUM PLANNING.

THE VILLA COLONY SYSTEM.

The trend of asylum planning has, for some years past, been in the direction of more home-like and simpler institutions aggregated in colonies or settlements, rather than the large buildings, which a few generations ago served the purpose of Homes of Detention for the insane, without much regard to their rational treatment.

In all matters relating to progress and education the Scotch have nearly always proved themselves pioneers as far as the British Empire is concerned. It is, therefore, not to be wondered at that the Aberdeen District Lunacy Board, having contemplated building a new asylum, appointed a committee to visit the leading institutions on the Continent. The committee, in the course of their report, made the following interesting statement on the subject of a recent German Asylum which they had visited:—

In every modification of asylum management which has been attended with the removal of restrictions, the question of how far it is consistent with the safety of the public and of the patients has always demanded careful consideration, and it is right that the results obtained under the conditions which exist at Alt-Scherbitz should be looked at from this point of view. It is desirable, therefore, to see how the record of that institution stands as compared with other asylums in regard to the number of escapes, suicides, and other untoward occurrences. With reference to escapes, Dr. Paetz makes the following statement:—"For a long time the annual number of escapes has not been more than 1 to 1½ per cent. of the total number of patients;" and, he adds, that "it was only rarely that an escape was due to the want of locked doors and high walls, and was almost invariably due to gross carelessness on the part of the attendants, or to errors of judgment by the medical officers." This proportion of escapes which he records does not compare unfavourably with other asylums, as may be seen by a comparison with the asylums of Scotland, where the proportion of escapes appears, from the annual reports of the General Board of Lunacy, to be over 2 per cent. per annum. In regard to suicides, we find that the number of such cases since the opening of Alt-Scherbitz gives 0.72 per thousand, and it is sufficient to know that this is somewhat below the average for the whole of the Prussian asylums, which is given in the official statistics for 1877 to 1885 as 0.86 per thousand. These facts are sufficient to show that no special danger attends the adoption of the village type of asylum.

Cost of the Asylum.

A full statement of the cost of the land and the buildings at Alt-Scherbitz is given by Dr. Paetz. The land cost about £50,000, and the buildings, inclusive of the installation of the electric light, about £86,000, which together amount to £136,000. This gives for 660 patients an average of about £90 for building for each patient, and about £52 for land for each patient, a total of £142. Compared with the cost of recent German asylums built on the corridor system, the cost of the buildings is moderate; the buildings at the Berlin Asylum at Dalldorf having cost £108 for each patient, and the Western Asylum at Newstadt having cost £190 for each patient; in each case being more than double the cost of the buildings at Alt-Scherbitz. Recently erected corridor asylums in this country have cost much larger sums. In regard to the annual cost of management of Alt-Scherbitz, I found it impossible to ascertain from published documents such data as would enable me to compare it with the cost of management of other German asylums. Dr. Paetz has, however, been so kind as to supply me with information on this subject. The following is a translation of part of a letter which I have recently received from him:—"I have already dealt with the cost of maintenance of third-class patients in this asylum in my book, 'Die Colonisirung der Geistes

Kranken.'" The cost of board (Bekostigung) since then has remained substantially without change, and amounts to 230 marks (£11 10s.) per annum, or about 60 pfennig (7d. per dim for each patient.

In regard to this it must be kept in view:—

1. That the calculation of the cost of management is a quite arbitrary one, and cannot be satisfactorily compared with the figures of other asylums, as the cost of management is almost everywhere calculated on different principles.
2. That the cost of management for this asylum appears greater than it really is, because it includes several building expenses and outlays on stock properly belonging to the original cost of erecting and providing the institution, which are gradually paid off out of the revenue for current management.
3. That the profits from our estate management are not included in our figures, as the estate and the asylums have quite separate sets of accounts. The capital sunk in the purchase of the property bears interest independently from 5 to 7 per cent.

These circumstances being taken into consideration, that is to say, if the surplus of income be deducted from the total sum charged to maintenance, there can be no doubt that the cost is much lower than in other German asylums. A calculation made some years since for a large number of asylums showed that only a few were cheaper, and these were exclusively second-class institutions for chronic patients (Pflegeanstalten), with defective equipment and inferior alignment, which could not be compared with this asylum, and which, now that their condition has been improved, appear to be conducted at greater expense than this asylum. It may thus be confidently stated that this institution, although one of the best of German asylums, is one of the cheapest, not only in regard to the cost of building, but also in regard to the cost of maintenance. It seems to me to be the type of asylum that conforms most completely to the most modern and best idea of

What an Asylum ought to be.

It carries further than any other type the idea of making asylum arrangements similar to those of ordinary life, and every development in asylum construction which has stood the test of experience has been made in this direction. The favour with which the Alt-Scherbitz type of asylum is regarded is steadily increasing in Germany. In the United States of America it is also gaining in favour. In a notice of the Eastern Hospital for the insane at Kankakee, the late Dr. Hack Tuke says:—"This institution has been in operation sufficiently long to test the wisdom of the plan adopted of a central building with a large number of entirely distinct pavilions. We are able to give the opinion of a high authority who has watched the experiment from the beginning at the present time with great interest." The authority to whom Dr. Hack Tuke refers is Mr. Frederick Wines, who says:—"Kankakee has already accomplished all that the originators expected from it. It shattered at a single blow the superstitious veneration formerly felt for the old-fashioned type of hospital construction." The ideas embodied in the Kankakee Asylum have been more or less carried out in three other institutions, namely, at Toledo (Ohio), at Richmond (Indiana), and another at Dakota. A new asylum for pauper insane of Long Island (New York),

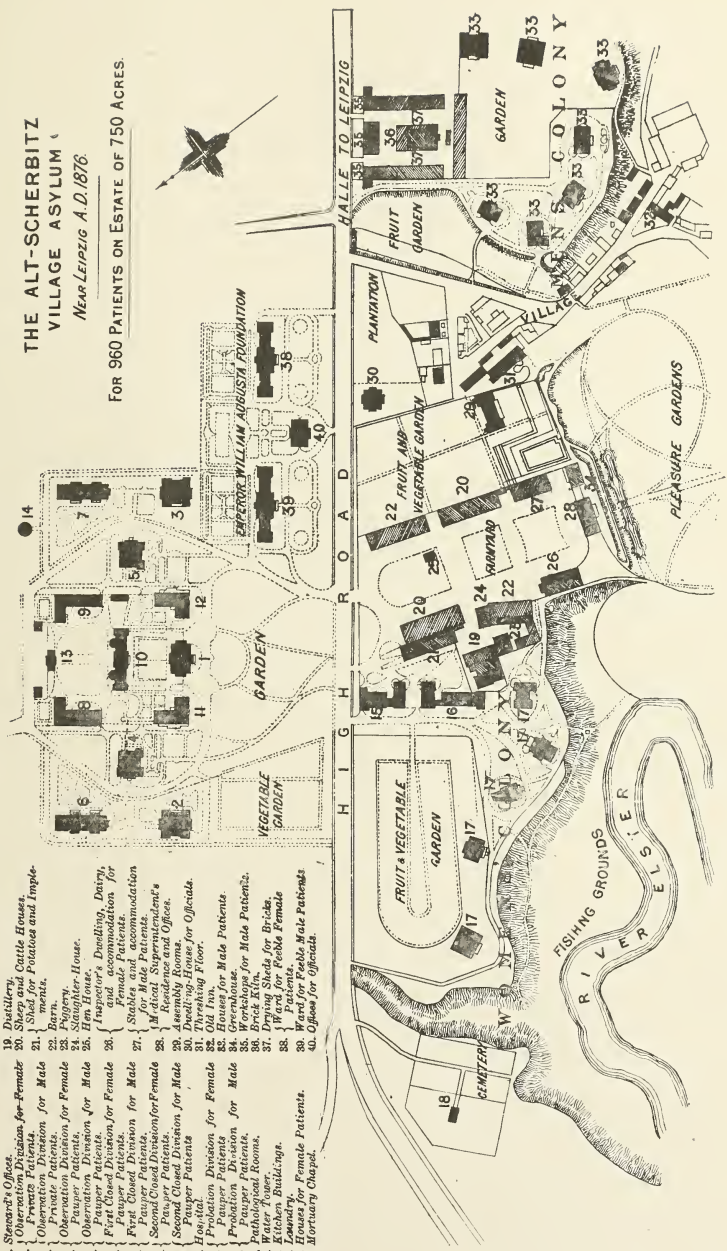
Dr. Hack Tuke says:—"The guiding principle in the building has been the segregation of patients according to their mental condition, the buildings being so placed that they would admit of economical enlargement of the asylum by the erection of similar blocks. It has been found that this plan has materially reduced the cost of construction, favoured a good classification, and increased the health and happiness of the patients. The buildings for the patients in the Willard Asylum have been erected at a cost of £50 per bed. I shall only quote further a statement by Professor Cabred, who recently made an extended tour in this country and on the Continent on behalf of the Argentine Government, for the purpose of deciding on the best type of asylum to be adopted for a new asylum at Buenos Ayres. He says,

REFERENCES

1. Secretary's Office.
2. Observation Division for Female.
3. Observation Division for Male.
4. Private Patients.
5. Observation Division for Female.
6. Observation Division for Male.
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THE ALT-SCHERBITZ
VILLAGE ASYLUM
NEAR LEIPZIG A.D. 1876

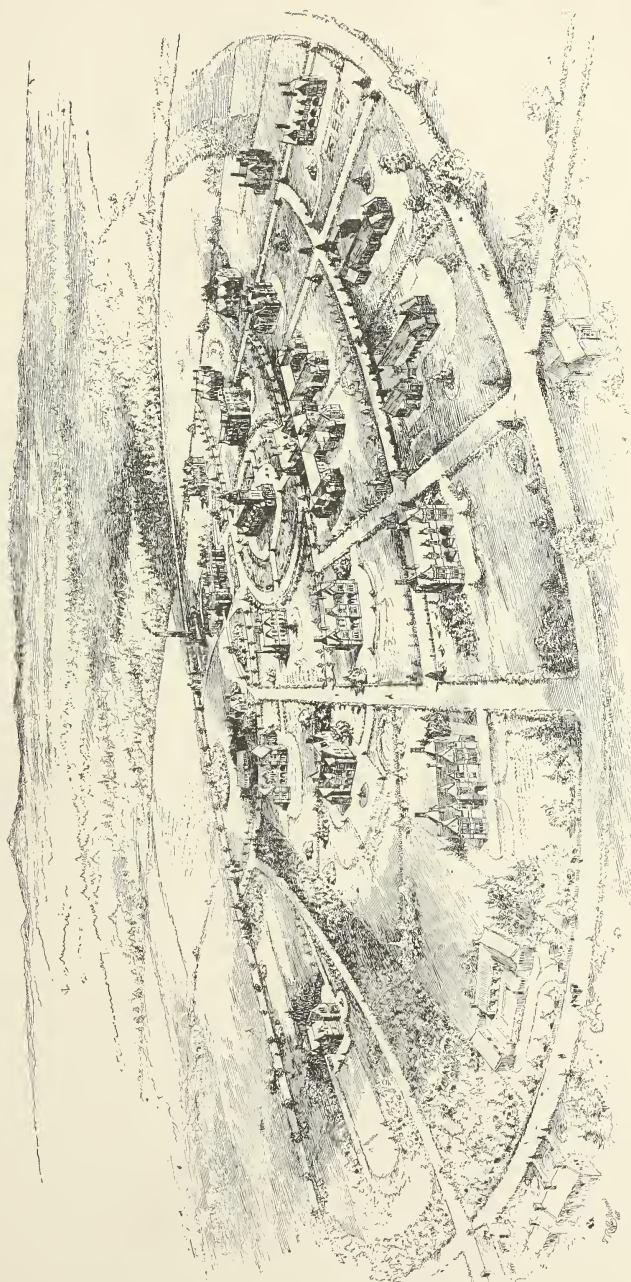
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"THE LATEST IDEAS IN LUNATIC ASYLUM PLANNING—THE GERMAN SYSTEM."

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THE VILLA COLONY ASYLUM AT ABERDEEN.

This gives a bird's eye view of the buildings of the new asylum to be erected at Kingsseat, Newmachar, by the recently-formed Aberdeen City District Lunacy Board. The sketch is taken from the plans of the Architect, Mr. A. Marshall Mackenzie, A.R.S.A., F.R.I.B.A.

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in regard to the asylum at Alt Scherbitz, that:—"It is the asylum to be recommended as the model most worthy to be imitated everywhere, having regard both to the requirements of medical treatment and to the complete realisation of philanthropic aims." Though there is no asylum in Great Britain or Ireland precisely of the Alt Scherbitz type, there are among the asylums for private patients some which make a near approach to it. But there are so many important differences between the arrangements for pauper patients and those for patients at the higher rates of board, that the experience gained at these establishments is not regarded as altogether safe guidance when the erection of a pauper asylum is in question. The erection of villas of the Alt Scherbitz type, as adjuncts to corridor asylums of the District Asylum or County Asylum class is, however, not uncommon, and some of these are excellent examples of the kind of houses that would be suitable for an asylum of the Alt Scherbitz type in this country. Two villas recently erected at the Perth District Asylum at Murthly might be accepted as examples of what the houses should be in the section of the institution corresponding to that which is called 'The Colony' at Alt Scherbitz."

The Aberdeen Plans.

As already mentioned, the Villa Colony system has, after the fullest investigation, been adopted by the Aberdeen City District Lunacy Board. Work has already been commenced at Kingsseat, the first sod having been cut some time ago for the new reservoir required in connection with the water-works system. At this place there are no fewer than 333 acres of land, but the buildings will be within an area of about 45 acres. The Board accepted the tender of Mr. Edgar Gauld for the mason work of the asylum, which will cost nearly £30,000. The total cost is estimated at about £100,000. The site is on the north side of the railway, about a mile nearer Aberdeen than Newmachar Station. It slopes pleasantly to the south, and has a background of rising ground, well wooded. The asylum is designed on the model of Alt Scherbitz, in Prussian Saxony, in what is known as the "segregated" system, in which the patients are classified and housed in separate groups, according to the nature of their mental trouble. There will be in all twenty-seven separate buildings, the most important of which were shown in our illustration, and they will occupy a site of about 30 acres. The rest of the estate will be utilised for farming and gardening work for the patients and for recreation ground.

The buildings are arranged in three sections—namely, medical, industrial, and general. In the medical section there are eight separate buildings, as follows:—One hospital, divided in separate wings for physically sick, infirm, and recent acute mental cases (bedridden); also an isolation ward for suspected cases of infectious disease, two observation villas, two close asylums, and two convalescent hospitals. The industrial section consists of six villas—three for males and three for females, accommodating from thirty to forty in each, the patients being grouped according to their fitness or unfitness for freedom from supervision and for outdoor work.

Villa No. 1 is intended for patients capable of working who are untrustworthy in consequence of restless habits, of delusions likely to render them troublesome or offensive, or of a tendency to run away, or to commit offences.

Villa No. 2 is designed for patients able to work who require somewhat less day supervision than the former, but who cannot be wholly trusted to themselves.

Villa No. 3 is intended for working patients requiring a minimum of day supervision and no night supervision.

The general section consists of 12 separate buildings—namely, administration offices and boardroom, kitchen, and stores, laundry, workshops, boilers, homes for nurses and female servants, medical superintendent's residence, steward's house, lodges for gardener and engineer, cottages for married attendants, green-houses, recreation hall, and mortuary.

The Accommodation Provided.

at present will suffice for 550 patients, and it is proposed that future extension should be met by the erection of ad-

ditional villas from time to time as required. In view of this prospective addition to the number of villas, the central buildings, such as the kitchen, hospital, and boiler-house, have been made sufficiently large to meet the requirements of an asylum of 700 patients, instead of 550. The patients will dine in the separate villas, their meals being sent from the general kitchen in specially constructed trollies. It was at one time suggested to have an underground electric tramway for this service, but this system was dropped on the score of too great first cost. The architectural treatment of the various buildings, though plain, is exceedingly pleasant and varied. No two of the villas are exactly alike, and the effect of such diversity will be to impart a picturesque and village-like appearance, without any suggestion that the villas form part of a large institution. The style is the late Scottish renaissance, and a good deal of effect is obtained by comparing the local granite obtainable on the estate itself with some of the other lighter-coloured granites from quarries in the neighbourhood. The buildings are all to be of granite, which, by reason of the difficulty of cutting will make them costly. It may be mentioned that the Alt Scherbitz Asylum is of brick.

The Architect.

Mr. MacKenzie, the designer of the Aberdeen villa colony system, is an Associate of the Royal Institute of Architects, and has made himself thoroughly conversant with all aspects of the Asylum question. Not only has he studied the subject thoroughly, and discussed it with Dr. Paetz and other authorities, but he has personally visited Alt Scherbitz and other Continental asylums, as well as all the English and Scotch Asylums, and is thus justly regarded as the greatest architectural authority on the subject in the United Kingdom. He has designed all the biggest institutions in Aberdeen, the Queen's Church at Crathie, a Bank in the Isle of Man, etc.

As was mentioned by Dr. Graham at the last meeting of the Asylum Committee, the villa colony system has also been adopted at Edinburgh, where, we understand, the designs were prepared by Mr. Hippolite Blanc. The scheme is no doubt comprehensive and elaborate, but the cost is estimated at something like £600 per bed, as compared with £180 at Aberdeen.

We are indebted to the Belfast *Weekly Telegraph* for the foregoing particulars.

THE HOUSE BEAUTIFUL.

DISPUTE ABOUT THE BILL FOR MAKING IT SO.

In the Official Receiver's Court, London, recently still more light was thrown upon the accuracy of Messrs. Bertram's little bill for £10,729 for repairing Georgiana Lady Dudley's house in Grosvenor-street.

Counsel for the builders admitted that it took the British workman but 105 hours to fix the sink, not 141 hours, as accidentally stated in the bill. The man who fixed it has gone away, and, unfortunately, cannot now be traced, although his name is known. It is Smith.

Another unfortunate accident Messrs. Bertram calculated their profit at the rate of 12½ per cent., instead of 10 per cent., as they intended.

Mr. Bessant, from Bertram's, denied that the charges staggered either himself or Lady Dudley, who seemed to understand the work perfectly. She only complained when she thought they were not getting on fast enough. Then they used to rush about and hurry everybody on. For this a slight extra charge would be made.

His declaration that the old house was shored up so much that it was scarcely safe to walk about in it for fear of its collapsing, drew from the Official Referee the observation that they were not all as ignorant as they looked. Mr. Bessant replied that he knew it.

THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.

BY BARRY PARKER AND RAYMOND UNWIN.

A Lecture delivered before the Society of Architects, and Published in the Official Magazine of the London Society.

(Continued.)

Another Type.

In the next plan the hall was made into the chief living-room; it is carried up two stories to allow of an organ gallery. The gallery leading to the balcony, the landing, and the staircase, are all thrown into this hall, the stairs being so arranged as to afford a screen to the fire, forming a sort of deep angle with low ceiling under the landing. The low ceiling continues under the organ gallery and the balcony, the central part of the hall being open to the full height. The sense of cosiness in this angle is greatly enhanced by contrast with the lofty open space outside; while the variety in lighting, whether when the morning sun streams in at the great east window, or when the ingle glows red in the gathering dusk, adds a perpetual charm. In the gallery is a second fire with a lounge seat by the organ under a kind of canopy formed by the half landing of the second floor stairs.

A Good Hall.

To obtain this spacious hall the remainder of the house has been reduced as much as possible. Only one other small room, for den or meal-room, is provided, with kitchens, offices, and four bedrooms, two of which are on the second floor. It is open to question whether it would not have been a wiser use of the space to have thrown the vestibule also into the hall as was at first intended. Much dignity would have been added to the entrance thereby, while the way from the kitchens to the bedrooms would have been less through the living parts of the hall than now.

The Theory.

Let us should be inclined to think that only for people living a very exceptional life would it be advantageous to throw so much space into one room, I will next refer to a design drawn for a London literary man, who though not able to afford a large house, still by reason of his position required occasionally to be able to entertain a good deal of society. Here the first consideration has been to obtain a hall which would be at once a comfortable living room and a dignified entertaining room. The meal-room has been kept as small as would just allow of a little dinner-party being given in it. The fire is placed in one corner, the sideboard in another; had it been possible to put the door also in a corner it would have been still more convenient, for in a small dining-room it is in the corners that there is a little space to spare.

Narrow Plots.

The narrow Hampstead building plot, having a south-west aspect, and the best prospect to the south, dictated the general arrangement of the house and the placing of the best room at the south corner. This room is spanned by two arches to carry the wall of the study over, within one of them is placed the fire recess with seats and ffitment, thus using up all the space under the stairs to add to the size and character of the room, while the stairs themselves which are shut off from the vestibule by a door are also open to the room, the quarter landing forming a small gallery overlooking it.

Another Staircase.

The staircase is such an essentially interesting and decorative feature in a house, that it always seems a pity to shut it off in a mere passage, and the space under and around it may be made to add so much to a room both in size and individuality. In old houses the charm of such features is well recognised, for the favourite view, alike for the artist and the photographer, is that which contains some peep of stairs from the hall, some gallery, balcony, ingle or deep window recess. When the most is made of such advantages as can be claimed for the bare square room, they seem but a poor compensation for the loss of character and charm.

"Combined" Room.

Over the hall in this house are placed the client's study and bedroom, the two being combined that both may have the benefit of the whole air, pace, book cases and curtains screening off the bedroom portion. Double doors and double windows are fitted to this room, for perfect quiet both by day and by night is essential, and further to secure this, ventilation is obtained by means of two fireplaces and an air shaft built in one of the stacks. The client's wife, son, and daughter all proposed to make considerable use of their bedrooms in the day time.

Fussy Elevations are Bad Form.

The elevations are somewhat more elaborate and fussy than we should make them now. One gets tired of seeing half timber stuck about in all sorts of positions, and disinclined to use it even when, as here, some such construction is rather demanded by the roofing.

Cottages.

But I must pass on now to cottages, the second part of our subject. The distinction between a small house and a cottage, never a very clear one, has been further obscured by a common affectation of simplicity. The word certainly suggests a simple shelter for a simple form of life, and for our purposes I propose to regard as a cottage any house in which separate accommodation is not provided for servants. Provision for domestic help there may be, but it must be "as one of the family," not constituting a separate class to be separately provided for.

To cottages, then, all that has been said about the advantage of securing a good living-room, even at great sacrifice of other conveniences, applies with additional force. For not only is the total space at our command usually less, but the number of functions which the living-room has to provide for it greater, many of the functions of a kitchen being added to it. To combine the comfort of a living-room with the convenience for work of a kitchen will tax our skill in planning, and, as the space we can give becomes less, our care in the disposal of it must become greater.

A Large Cottage for "A Simple Quiet Life."

Let us again proceed by way of example, taking a largish cottage designed for a client who wished to live a quite simple life, yet on a scale that would allow of his enjoying the more necessary comforts and refinements. The site is near a small Derbyshire town, and consists of a mound caused by the out-crop of some shale grit. On the north runs a stream, down to which the ground falls precipitously; the road is to the west, and there is a steep fall here also; to the east the fall is slight, while to the south the ground rises gently. There are fine views in all directions, most interesting to the north, least so to the south. The client, however, desired direction. There is a window to the north to command the best of the view—not a large one, certainly, but one so placed that it is natural to look through it from many parts of the room. A window on the south side admits plenty of sun, and in addition on this side there is the outer door, placed there that it may be possible to enjoy the charm which a door opening direct from a room on to a sunny garden always gives. Such a door, must, however, be so placed that while the peep out is obtained the comfort of the room is not destroyed. Here we have gathered the two doors and the stair foot together in a narrow part of the room out of the way, leaving all the rest of the space comfortably to occupy.

The Fireplace.

The fire is placed on the north wall, in a deep recess, one side being devoted to rest, the other to work. The former is occupied by a comfortable low seat; the latter is devoted to a working dresser, fitted with a small fixed bowl for washing up glass and china, drawers, cupboards, and plate rack. To save constant running to and from the scullery, a small hatch closed with a shutter is arranged to open on to a wide enamelled shelf, so that saucepans and such like can be handed through. All the kitchen work done in the living-room is thus confined to the one corner handy to the fire for cooking, and well lighted by the north window, which does not add any unwelcome heat just there.

(To be continued.)

THE FIELD LEVEL-BOOK.

By JAMES FERGUSON, Civil Engineer.

(SPECIAL TO THE "IRISH BUILDER.")

I have often thought it strange that no modern book on levelling (or, at least, none which I have come across) gives the form of Field Level Book now in universal use amongst Civil Engineers. Not even that astute Civil Service grinder, Mr. G. A. T. Middleton, in his "Surveying and Surveying Instruments," notes it; and the form illustrated by him, in common with other writers on the subject, is now quite discredited. Possibly the explanation of this anomaly lies in the fact that practical men, who use only the most economical methods, find their profession so lucrative that they have little time to write about their specialities. And, possibly, it is that such methods are traditional secrets of only the best offices. At any rate, it seems to me fitting that I should endeavour to throw some light on one subject upon the chance of benefiting others. I shall first give the orthodox form of Level Book, as laid down by the text-books, followed by an analysis of it; then, do as much by the modern form, and collate the results. The examples I give are those of an actual survey. And I omit all the facts which are, strictly speaking, extraneous to the immediate question. That is to say, I omit all bookings from the "Distance" and "Remarks" columns, which, in both the older and newer forms of Level Book, would be identical, and therefore not at all pertinent to my review.

Back.	Inter.	Fore.	Rise.	Fall.	Red. Levels.	Dist.	Remarks.
7'59	5'32 4'89	2'27 43		79'11 81'38 81'81			On B.M. 79'11
1'05	3'50 98 2'65 1'00	2'52 1'65		83'72 83'72 81'27 83'79 82'12 83'77	2'45 1'67		
5'47	4'33 7'82	9'20 1'14		75'57 75'57 76'71 73'22 68'00	8'20		
6'45	8'99 5'55	13'04 3'44		68'00 68'00 68'46 68'90 68'22 68'22	2'54 68		
5'25		6'23 4'23		69'24 69'24 75'82			
7'80	1'22 5'32	1'02 6'58		71'72 63'08 63'08 64'69	4'10 8 64		
10'50		8'89 1'61					On B.M. 64'66 64'69
44'11	58'53 44'11	22'57		36'99 22'57			Error = '03
	14'42			14'42 79'11 64'69			

Old Form.

This is the text-book form of Level-Book. Let us proceed to analyse it.

It contains in all eight columns, of which five must be common to all Level-Books, namely, "Back-sight," "Fore-sight," "Reduced Levels," "Distance," and "Remarks." With the two latter, as I said, we have here nothing, and with the "Back-sight" and "Reduced Levels" columns little, to do; so it is only with the remaining three that I am concerned. The "Intermediate" column, although orthodox, is omitted by many Engineers; and, indeed, its uselessness is obvious, for the few entries in the "Fore-sight" column might just as well take their places in the empty spaces opposite them in the "Intermediate" column, and make the latter a true "Fore-sight" column—as any entry in it may become the foresight for carrying on the survey; the last entry, how-

ever, for the sake of system, being always, and rightly, so chosen. "Intermediate" column or not, the true viciousness of this form of Field-Book lies elsewhere, viz., in the hitherto unmentioned "Rise" and "Fall" columns, which govern the calculation of the "Reduced Levels." I assume, of course, my reader is aware that each entry in the "Rise" and "Fall" columns marks the variation of the ground, at the field-reading opposite it, above or below the ground at the previous reading. For instance, the first "Back-sight" (refer above) being 7'59, and the first "Intermediate" 5'32, there is evidently a rise of 2'27. Similarly, the second "Back-sight" being 1'05, and the "Intermediate" following it being 3'50, there is a fall of 2'45. The rule is that if the subtraction be made *upwards*, the result is entered in the "Rise" column; and if *downwards*, in the "Fall" column. These rises and falls are then added to, or subtracted from, the reduced levels next laterally above them, in order to secure the reduced levels laterally opposite them.

The outline of this system thus before us, we can now estimate the amount of arithmetical labour involved in determining the object of the whole system—to wit, the reduced levels. These once found, we may destroy the other five columns, as their work is ended. Firstly, then, it is evident that the determination of each entry in the "Rise" and "Fall" columns involves a process of subtraction. As, in the example before us, there are 19 such entries, it is evident we have made 19 subtractions. Again, as in the determination of the reduced levels, each rise has to be added to the reduced level above it, or subtracted from, the reduced levels next laterally above them, in order to secure the reduced levels laterally opposite them. Similarly, as the falls have to be subtracted from the reduced levels above them, we have made a further nine subtractions. Now, to come to the so-called "checks" of this system—the additions of the "Back," "Fore," "Rise," and "Fall" columns, and their subtraction as shown. This process, evidently, involves four long additions and two subtractions. Furthermore, the addition, or subtraction, of the net total rise or fall, and the first reduced level or bench-mark (for comparison with the last reduced level) gives another subtraction. Lastly, the comparison of the last reduced level with the second bench-mark (for the discovery of error) involves still an additional subtraction. Making, now, an abstract of the above analysis, we have as the total amount of arithmetical labour—

4 Long Additions.

10 Simple Additions.

32 Simple Subtractions.

Let us now similarly examine the

New Form.

Back.	Fore.	Red Levels.	Dist.	Remarks.
7'59	5'32 4'89 2'98	79'11 81'38 81'81 83'72		On B.M. 79'11
1'05	3'50 98 2'65 1'00 9'20	83'72 81'27 83'79 82'12 83'77 75'57		
5'47	4'33 7'82 13'04	75'57 76'71 73'22 68'00		
6'45	8'99 5'55 6'23	68'00 65'46 68'90 68'22		
5'25	4'23	68'22 69'24		
7'80	1'22 5'32 13'96	69'24 75'82 71'72 63'08		
10'50	8'89	63'08 64'69		On B.M. 64'66 64'69
44'11	58'53 44'11			Error '03
	14'42 79'11 64'69			

Here the survey is the same as before, only differently booked.

The greater simplicity of this form is at once evident. Three columns ("Intermediate," "Rise," and "Fall") are dispensed with, and the figures are fewer. Let us glance at the method by which the calculations in this form are made. The first reading on the staff, or back-sight, is added to the height of bench-mark whereon the staff rests, the result being considered as the height of an imaginary plane (called the plane of collimation), along which the axis of the telescope moves. It is thus evident that all subsequent readings taken before the level is moved merely represent how much the various places levelled are below the collimation plane. To obtain the reduced levels of these places, therefore we have merely to deduct their readings from the collimation plane, which, on the face of it, is simplicity itself. For instance, the first back-sight, 7.59 plus the B.M. 79.11, gives a collimation plane of 86.70. From this figure subtract, in turn, each of the three fore-sights—5.32, 4.89, and 2.98, and you have at once the three reduced levels—81.38, 81.81, and 83.72. Here the level is moved. When adjusted in its new position, the first reading—1.05, is added to the last previous reduced level, 83.72, the result, 84.77, giving the new collimation plane, when the process continues as before.

And now, as previously, let us proceed to an examination of the arithmetical labours involved. Firstly, it is clear that for each back-sight we have to perform a process of addition, and for each fore-sight a process of subtraction, which gives a total of 7 additions and 19 subtractions. To arrive at the net total rise or fall, the sum is taken of (a) the back-sights; (b) the last of each series of fore-sights. (For the sake of clearness I have italicised the latter, but this is unnecessary in practice.) This process involves two long additions. These sums are then subtracted; the result added to, or subtracted from, the first reduced level for comparison with the last; and, finally, the last reduced level and the B.M. are subtracted (to discover error). In our example, these three processes are all subtractions. Making now, as before, an abstract of this analysis, we have, as the total amount of arithmetical labour—

- 2 Long Additions.
- 7 Simple Additions.
- 22 Simple Subtractions.

From this it is apparent that the amount of arithmetical labour alone required for working out the reduced levels is greater by half in the older than the newer form of Field-Book—if these distinctive names are permissible. Now, unless there is some greater consideration to the contrary, this fact alone should determine which to use. And there is not greater consideration to the contrary—quite the reverse. It is obvious that the less the arithmetical labour, the less the liability to mistakes, and the greater the ease in discovering one when made. Of course, the really vital part of levelling operations is the correct reading and booking of levels in the field, and the accuracy of this can only be checked (a) by working back on to the place where the levelling started, or (b) by levelling on some independent bench-mark near where it ends. The latter method is, I think, both preferable, and generally the more convenient. Bench-marks are dotted thickly over the country, as a glance at any 6 inch ordnance sheet will show. The form of Field-Book, therefore, has nothing to do with this, strictly speaking. But if its form be cumbersome and calculated to multiply mistakes in reduction, a perfectly correct survey may appear very wrong until great labour is gone to in discovering the error. In the older form of Field-Book, for instance, a single miscalculation at the beginning, or at any place, in working out the reduced levels vitiates every other reduced level which follows it—this while the rise and fall columns may be quite correctly determined; because each reduced level hangs immediately upon the one which precedes it. In the newer form, on the other hand, the general chain of reduced levels is only vitiated after a mistake made where the spirit level is moved.

Another consideration of great importance is the handier size of Field-Book which the new form makes possible. In the latter, a page four inches wide is quite sufficient, and even a slightly narrower one may be adopted. An old-form Field-Book, with the same width of columns, requires a page six inches wide—like the arithmetical labour, one-half greater.

A word, in conclusion, apart from either form of Field-Book. Emphatically the first thing to be done on the completion of such a survey as the above is to find the net rise or fall by subtracting the sums of the back-sights and the last of each series of fore-sights. The net rise or fall added to and subtracted from the first bench-mark should give the second bench-mark. If these are widely at variance, then the whole work had better be discarded—indeed, must be—and commenced afresh. By this much labour in working out all the levels is avoided.

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Ventilation and Heating of Buildings.—The problem of how to heat economically and yet efficiently has been and is both a complicated and difficult one, owing to the many circumstances of latitude, exposure, nature of employment of inmates, number of occupants of dwelling, and so on, and yet there are some primary principles which must be fully understood if even a moderate degree of success is to be attained. I shall attempt to outline these in order of importance as they appeal to me. Owing to the constant atmospheric movements of external air, it must be remembered that the external air is, even in cities, infinitely purer than the best house air under ordinary conditions. For instance, Dr. Paul Regnard quotes a table from Miquel giving the bacteria per cubic metre in air as follows:—

Air over the Atlantic	...	...	...	0.6
Air of Paris at summit of Panthéon	...	...	...	1,200
" in Rue de Rivoli	...	...	...	3,480
" in a new house	...	...	...	4,500
" in the sewers	...	...	...	6,000
" in an old house	...	...	...	36,000
" in the Hôpital de la Pitie	...	...	...	79,000

Or, as Regnard says, a patient in La Pitie inhales 790,000 bacteria daily.

Belfast has already taken steps to sink the foundations for a statue of our late beloved Queen. The statue will be erected in front of the Grand new City Hall now in progress. Why so great a delay in Dublin?

ARCHITECTURE.—Draughtsman is willing to Prepare Scale and Detail Drawings for Alterations, &c. Accuracy guaranteed; Specifications and Quantities. Terms moderate.—Reply to this Office.

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4/- per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street Dublin.

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APRIL 10, 1901.

No. 990

THE TENEMENT QUESTION IN DUBLIN.

Following on our remarks on this question in our last issue, we note the interesting lecture by Mr. Charles Dawson, the Chief of the Rates Department of the Dublin Corporation. Mr. Dawson, in brief, upholds the practice of the wholesale demolition of existing tenement houses, and the erection of new dwellings. He suggests the saddling of the ratepayers with additional heavy burdens. Doubtless, Mr. Dawson has found the Dublin ratepayer so willing a beast of burden that he cannot conceive his becoming restive, however heavy the load piled upon his shoulders may be; yet, for our part, we hold that every suggestion which might tend to relieve the ratepayers, and at the same time amend the sad conditions of life in the poorer quarters of our city, is entitled to the fullest consideration. We believe the cry of more new dwellings to be a "bogey." No doubt, to pull down the old homes would be the simplest and easiest way out of it. But certainly not a cheap, or, on the whole, effective way, for the new rents must of necessity be prohibitive. In the daily press, Mr. W. G. Doolin, architect, some time since made a good suggestion in regard to remodelling old Dublin houses, and we are pleased to notice that a motion now stands in the name of Alderman Farrell that an independent architect be appointed by the Corporation to enquire into the feasibility of all such schemes. The rigid and fair enforcement of suitable bye-laws would do much to mitigate the terrors of death and disease at present bred of filth and over-crowding. The Corporation ought to have powers in respect of tenement property, analogous to those powers by the Board of Works over rural drainage boards, namely, that in cases where the drainage works are not being efficiently maintained, the Board of Works, after due notice, steps in and executes the requisite works, and recoups itself by working the revenues of the Drainage Board. Of course, the city bye-laws do, in a limited fashion, confer some such powers, but they are little made use of. The sweeping, scrubbing, lime-washing, and painting of tenement houses should be rigidly insisted upon, and scheming owners given short shrift. At present it is mostly the more willing and conscientious owners who are severely dealt with. The schemers know every clause and section of the law, and know how to evade it. It would also be a step in the right direction if the Corporation were empowered to grant short loans upon easy terms for the improvement of tenement property.

EXHIBITION OF PRIZE DRAWING, ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The prize drawings of the R.I.B.A. were this year again on exhibition at the rooms of the Royal Institute of the Architects of Ireland in Lincoln-place, Dublin, from the 23rd to the 30th ult.

The draughtsmanship displayed is, without exception, of the greatest merit, and well worthy of study, though, looking at the attendance book, we were disappointed to see the exhibition so little appreciated by Dublin students. It is far from encouraging to note a total of about fifteen names on the second last day of the display.

As regards design, the show is not equal to previous years; very little ingenuity of planning is displayed. The principal exhibits were:—For the Grissell Medal—Design for a Timber Foot-bridge; awarded the medal and ten guineas; Mr. E. Forbes. Well worked out, but commonplace. Submitted under the motto, "*Pons Asinorum*." Is this a joke? Two designs for the entrance to a public park are both good, and show fine draughtsmanship—by Mr. W. Fairbairn ("Corona") He was awarded a certificate and £30. The Sloane Medallion—Design for a clubhouse. Two designs by Mr. M. J. Dawson and Mr. H. M. Cantley were respectively awarded £30 each. They are very equal in merit, the designs being in the prevalent "Georgian" taste, with good detail and much merit in the fine massing of the respective buildings, but the facades are unnecessarily heavy, while as examples of clubhouse planning they would be comfortable to the last degree. The draughtsmanship is splendid.

The designs submitted for the "Owen Jones" prize (colour decoration) are about the best things in the exhibition. The very best of all, in our opinion, is, however, a delightful sheet of pencil sketches of old work, submitted for the "Pugin" Studentship. For the Royal Institute silver medal for measured drawings, Mr. L. L. Bright submitted a fine set of drawings of Kirby Hall; a most excellent and workmanlike set.

THE STRIKE OF JOINERS AT MESSRS.

H. & J. MARTIN'S, Ltd.

The joiners who went out on strike a fortnight ago on the ground that Messrs. Martin were getting joinery work done in Dublin and sent to Belfast, where it was fixed by "black-legs," have returned to work. On the men striking, without notice, a number of the employers met, and decided to lock out all their men unless Messrs. Martin's joiners returned. The men returned to work pending a definite arrangement about Belfast work.

To Braze Iron.—Everyone knows how pieces of iron are brazed together, by means of melted spelter or brass, but everyone may not know that only wrought iron can be successfully brazed, the carbon in cast iron, which exists partly in the form of particles of graphite, preventing the adhesion of the spelter, just as a coating of dust prevents the adhesion of cement to bricks or stones. If the graphite layer could be removed before brazing, there seems to be no reason why cast iron cannot be brazed as well as wrought iron, and a process for accomplishing this result has been patented in Germany, consisting essentially in applying to the surfaces to be united an oxide of copper, and protecting them against the influence of the air with borax or silicate of soda. When the joint is heated the oxide of copper gives up its oxygen to the graphite, converting it into carbonic oxide gas, which escapes in bubbles, while particles of metallic copper are deposited on the iron. Any oxide of iron which may be formed is dissolved by the borax, and the surfaces of the iron, thus freed from graphite, unite readily with the spelter, which is run into the joints before it cools, the copper already deposited on the iron assisting the process. The inventor claims that cast iron can in this way be readily brazed in an ordinary blacksmith's forge; and, if this prove to be the case, he has certainly conferred a great benefit upon industry.

CORRESPONDENCE.

GANDON'S DESIGN FOR CARLISLE BRIDGE.

TO THE EDITOR OF THE IRISH BUILDER.

DEAR SIR,—Referring to the letter of Dr. Bindon Stoney, C.E., in your issue of the 13th March, on the subject of the authorship of the design for the re-building of Carlisle Bridge, I have taken the following extract from the life of Gandon, published in 1846 from materials collected and arranged by his son, James Gandon, and edited by Thomas J. Mulvany, R.H.A., and I send it to you, believing that, on account of the unquestionable authenticity of the information it contains, and as it may not perhaps be very generally known, it should prove sufficiently interesting for publication, and will help to clear all doubts on the matter.

In the year 1786 the large dock adjoining the new Custom House, together with the stores, having been completed, Carlisle Bridge was commenced. The original design submitted by Mr. Gandon to the Commissioners of the Revenue was for a triumphal bridge, to commemorate the achievements of the Army and Navy during the reign of George III. The extra expense of the proposed colonnade and embellishments was estimated at £10,000, and the Commissioners, with a view to economy, adopted the design for the bridge as it is now erected. The bridge is ten feet wider than Essex Bridge, and is wider than either Westminster or Blackfriars Bridge in London. The erection of the Carlisle Bridge was the commencement of the most important improvement in Dublin, opening a magnificent thoroughfare, the continuation of Sackville-street, by Westmoreland-street, to the Bank, Dame-street, and, by Grafton-street, to Stephen's-green.

The first stone of Carlisle Bridge was laid by the Right Hon. John Beresford, in a caisson, on the 5th March, 1791. The keystones of the arch are ornamented with emblematical heads by Edward Smith, an artist whom Mr. Gandon always delighted to employ, and of whom his country should be proud.

Yours faithfully,

J. F. DELANY, M.R.I.A.I.

6 Gardiner's Row, Rutland Square, Dublin.

Note—It will be of interest to note that Mr. Smith, sculptor, Great Dominick street, is a direct descendant of Edward Smith.—ED.

AN ARCHITECTURAL ASSOCIATION FOR BELFAST.

TO THE EDITOR OF THE IRISH BUILDER.

Donegal Square, North, Belfast,

27th March, 1901.

DEAR SIR,—I have your letter to hand of the 25th inst., for which I am obliged. Kindly retain my name on the list of subscribers. The lowering of the price of the IRISH BUILDER is a step in the right direction, and at once places it in the position of one of the cheapest professional papers in the Kingdom. It has also lately undergone some real improvements, which no doubt will add greatly to its usefulness in the architectural and engineering professions. Your reports of proceedings at the meetings of the Architectural Association are very interesting reading. Most of the papers read at these meetings are upon subjects of the highest value to the students of architecture, to the young architects, and, indeed, I might say, to the profession generally.

It is pleasing to see so many eminent architects—not to speak of surveyors and builders—giving their time to the Association and its affairs, and I think great credit is due to these gentlemen for their enthusiasm in the cause.

I have long been of opinion that such an association should be started in Belfast. I am certain the benefits from it would be great, and of the highest importance, not only to the architectural student, but to young architects and to the profession generally in Belfast. We in Belfast are a long way behind Dublin in the matter of educating our architectural students, and I fear there will be no remedy until some such step as that I have indicated above is taken. We have our technical classes similar to those held in Dublin, and we are shortly to have a new Technical Institute, which, no doubt, will greatly assist the cause; but I think, in addition to this, we should have an association.

I should like to hear an expression of opinion from some of your readers who might be interested in this matter.—Yours etc.,

THE BRITON AND HIS COMMERCIAL RIVALS.

TO THE EDITOR OF THE "IRISH BUILDER."

DEAR SIR,—The bogey of "made in Germany," and the reiterated cry that British commerce is being worsted in every market of the world, lead me to ask for a little space in your columns to place before your readers one or two reasons why they need not give way to feelings of despair, or even despondency, over the situation. By the articles which are published from day to day in newspapers and magazines, our foreign trade is made to appear decadent, while that of Germany and America is shown to be as rapidly growing. "Give a dog a bad name, and hang him"—tell the whole world day by day that the Briton is a degenerate, and that his German and American rivals are cutting him out, and the prophets will bring about the fulfilment of their own forebodings. Merchants and manufacturers will become discouraged, and capitalists will look abroad for more promising fields in which to invest, and then we may write "Ichabod" over the gateways of our Custom houses. A great number of writers take it for granted that Germans and Americans have made relatively far greater progress than Britons during the past twenty years—indeed, the opinion of some of the authorities in the symposium on this subject, held in a monthly review this month, clearly is, that Britain has lost its supremacy in the field of commerce, and that it has fallen into a second or third place, behind Germany or America. I have seen enough of German and American factories and institutions to fill me with respect for them, yet I have felt no uneasiness concerning our own prospects. It may be all very well to attempt to spur on the British manufacturer to greater endeavour by warning him of what his rivals are doing; but exaggeration, and, in many cases, false statements, are not justifiable.

With your permission, sir, I would like to lay the following broad statement of facts before your readers, so that they may draw their own conclusions, from official data:—

The annual gross exports of merchandise from the U. K., Germany, and the U. S. A., as given in the Statistical Abstract of the Board of Trade, divided among the inhabitants of the respective countries, during the period from 1879 to 1899, split up into three equal terms of seven years:

Periods.	United Kingdom.		Germany.		U.S.A.		Germany, and U.S.A. combined.	
	Total Exports per capita.	£ s. d.	Total Exports per capita.	£ s. d.	Total Exports per capita.	£ s. d.	Total Exports per capita.	£ s. d.
1879 to 1885...	8 4 1		4 17 5		3 2 2		7 19 7	
1886 to 1892...	8 0 11		4 8 4		2 14 1		7 2 5	
1893 to 1899...	7 9 0		3 12 2		2 18 9		6 10 11	

The above decreases are due to the fall in value of late years; the actual volume of trade has, of course, greatly increased.

Besides showing that the Briton is doing more, man for man, than his two great rivals combined, the above statement proves that he is increasing his lead. In the foregoing the export business only has been taken into account, and, moreover, no credit has been claimed for the great preponderance of the British shipping and financial interests, in which this Kingdom is *facile princeps*.

Thanking you in anticipation for the space granted me in your influential columns—I remain, yours obediently,

GEO. J. S. BROOMHALL.

Royal Statistical Society's Rooms, 9 Adelphi-terrace, Strand, W.C., 25th March, 1901.

[NOTE.—Our correspondent is Mr. G. J. S. Broomhall, the editor of the *Corn Trade News*.]

The Monument to Queen Victoria.—The proposal to erect the memorial to our late Queen in front of Buckingham Palace is perhaps as good a one in regard to site as could be made; but it ought to be at once pointed out, in the most emphatic manner, that to render any important monument of the kind effective, the question of its position on the ground will need very careful consideration, or else some re-arrangement of the ground will be necessary.

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INSTITUTION OF CIVIL ENGINEERS OF IRELAND.

[3rd APRIL, 1901.]

THE PRESIDENT, MR. GLOVER, IN THE CHAIR.
THE UTILISATION OF SEWAGE.

By MARMADUKE F. PURCELL, Member.

The problem besetting every engineer dealing with sewage drainage is how, when he has collected the sewage, he is going to get rid of the solids contained therein? This is comparatively an easy matter in the case of small towns situated on the seashore, but becomes more perplexing in accordance with the increased size of the town or city which has to be dealt with, as in the case of large deposits being sent out with the tide, there is always the danger, almost the certainty, of such deposits being swept back to a large extent, and re-deposited on the foreshore, there to become a nuisance and a danger, to say nothing of being a waste of valuable material. Then, as we go further inland, the problem becomes more pressing, for you must either pollute your rivers, again losing matter of value, or you must treat it as manure, and sell the sludge or cake to the farmers, or else utilise it on sewage farms. Both these latter alternatives have their respective values, and also their striking disadvantages; in the former case the value of the sludge to the farmer depends largely upon the form of precipitant employed at the settling tanks; and even then, if suitable for their particular crops, they object to sending their horses and carts to draw with each load more water than manure; and again, owing to presence of such precipitation material as is most usually employed in the tanks, the full decomposition of the constituents of the sludge is delayed after being spread over the land, and, as a consequence, the best results are not obtained for the farmer as speedily as he can obtain them from artificial or natural manures. The question of sewerage farms is one which I do not feel myself competent to enter into, but I understand that to be effective the area must be great, so as to get the acme of efficiency, and the sludge should be dug in, and the ground left fallow for three years to obtain the best results; consequently, in any up-to-date sewerage farm, you could only have one-third of it under cultivation at any one period; but, there is a much graver aspect of the sewerage farm system, and that is, the indestructibility of disease germs by the ordinary methods of precipitation employed at depositing stations, and the absorption of such germs into the cellular tissues of the vegetables grown on such farms, and their transference in the course of their use to the human body, and the resultant spread of such diseases as typhoid, etc. This alone should lead us to do all we could to utilise in some other way the valuable asset that every community produces, which many throw away, others misapply, and all would like to recover. But the question is, how to do this efficiently and economically; how to produce value where at present we have loss and danger. These were the questions that presented themselves to my mind some years ago, and to which I endeavoured to get a satisfactory answer. I knew that many workers before me had gone into the same field and retired baffled and disheartened. In the course of my investigations I came to the conclusion that in place of looking for and dealing with a single resultant of the quartette that may be derived from the sludge deposit, the only thing for an economical working would be to obtain all four (main) products, and that, if possible, at a single operation. Leaving out my earlier efforts, I will endeavour to give a succinct account of my ideas and experiments dealing with the deposit from the time it is filter-pressed and delivered at the works.

My object is the distillation of the filter-pressed sewage obtained from any sewage-disposal works where the use of filter-presses is adopted, and, assuming that the cakes of sewage can be obtained first hand, and in such a condition as to bear transit, then the process has for its ultimate object the production of oil, ammonia (as ammonia water), and a

solid residue which is to be converted into cement—for which purpose it is admirably fitted, especially where lime has been used as a precipitant in the separation of the sewage into sludge and affluent, as is the case in London.

The London sludge contains:—

Moisture	...	58.06	} Nitrogen 3 per cent. Amm. Sulphate, 87 per cent. per ton Wet Cake.
Organic matter...	16.69		
Mineral matter...	25.25		

The mineral matter contains:—

Carbonate of lime	...	...	7.94
Free lime	...	...	2.45
Silica	...	...	8.08
Oxide of Iron	...	...	.97
Alumina	...	...	3.39
Phosphoric Acid	...	...	.65

From mere inspection of the above results it will be seen at once that by simple drying of the sludge it would give a body capable on distillation of yielding very large amounts of ammonia, and also an oil, which would be of value as a carburetting material in the manufacture of gas. Experiments were first made on a small scale in the laboratory with pressed sludge obtained in London, and very promising results were obtained; then an ordinary gas retort was tried with inferior results, both as regards the yield of oil and ammonia, and it was conclusively shown that the vertical position of the retort was the proper one, if the largest yield was to be obtained, and also the sewage must be distilled in a retort capable of giving two different temperatures (or preferably four), one (the lower) at which the elements present in the material chemically combined to form the oil vapour, and another at which the Nitrogen (still present as such in the spent shale) was burned, so to speak, in an atmosphere of steam, and converted into ammonia by the aid of the caustic lime produced in the operation. With these facts in view a small experimental retort was set up at Bark- ing, and tried by producer gas—and from this small and very imperfect apparatus considerable experience was obtained, and oil and ammonia sulphate produced. It was shown that *external* heating of the retort was of no value if a high percentage of ammonia was to be obtained, and, therefore, a retort on the principle of the Young and Bilbey is most suitable for the purpose. The oil obtained from the sewage would be of value for either burning or converting into gas. The residue coming from the retort was a valuable body, and could be converted into a very fair cement worth at least 10s. per ton. A very large proportion of in- condensable gas was produced during the distillation, which could either be turned into the retort benches or used as fuel to dry the cakes of sludge before they were distilled. The method of distillation to be adopted would be on very much the same plan as that used in Scotch Shale works, except that before the sewage could be distilled, it must be dried, and this would be done by the waste gases arising from the retorts, and by carrying the hot gas flues under floors on which the cakes of sewage were placed. With this exception the process would be identical with the shale distillation, oil, gas, and ammonia water being produced and condensed in suitable receivers, afterwards separated, and the ammonia obtained in the shape of sulphate, and the great factor in the profitable production of oil from shale is the number of pounds of sulphate which is obtainable from the ton distilled. This in Scotland may be taken as between 25 and 37 lbs. per ton (the highest average).

Appended is a copy of the balance sheet of an oil works using Henderson's retorts, and from that the following figures have been obtained:—

1. The yield of crude oil per ton of shale is about 37 gallons.
2. The yield of ammonia sulphate is about 18 lbs.
3. The cost of mining and obtaining the shale is 4s.
4. The cost of distilling and producing the oil is 4s. per ton of shale.
5. That by far the largest profit in the manufacture is obtained from the production of the ammonia sulphate.

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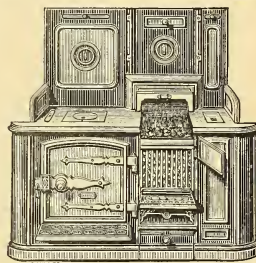
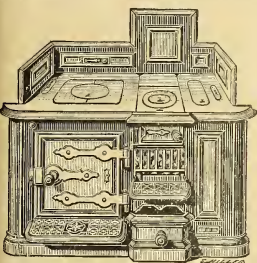
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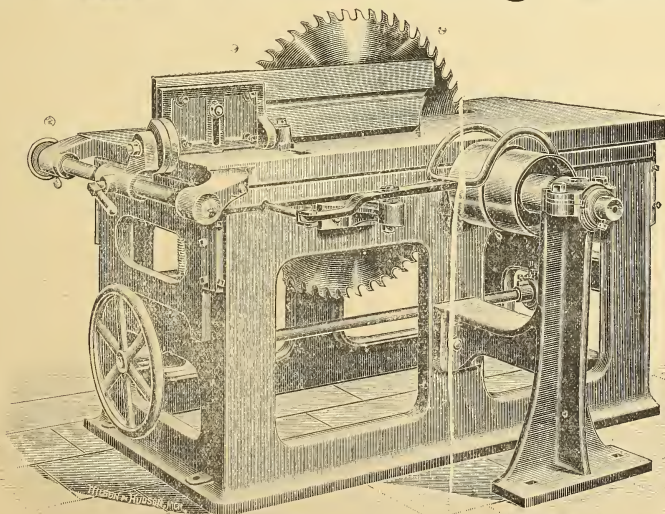
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ARDEN WORKS, HALIFAX, ENGLAND.

Now, it is evident that if the compressed sewage can be obtained from the sewage works for the simple cost of transit, or at a nominal cost, or utilised by the authorities on the spot, and that by distillation it can be made to yield a high percentage of ammonia, and also give oil, and a valuable residue in the form of cement, then a very valuable return will be made by treating such material.

From the results of a great number of experiments made, both in the laboratory and on a larger scale, it has been proved that on the average about 9 to 10 gallons of oil would be obtained, and from 57 to 65 lbs. of sulphate of ammonia; in some cases over 100 lbs. to the ton was obtained.

The following are the results:—

Wet Cake from	Ammonia Sulphate.	Residue.	Oil per ton.	Water.
Cross Ness	57'56 lbs. per ton	39'00 %	7 to 11 gals.	54'10
Leyton	59'80 „ „	68'40 %	9 to 10 „	52'00
Wimbledon	65'63 „ „	56'00 %	5 „	51'00

In carrying out these experiments I found that it is necessary that the cake should be nearly dry (not containing more than 15 per cent. of water) before it enters the retort, and for this purpose the waste heat from the retorts would be economised, and also the gas evolved during the distillation; even if extraneous heat had to be applied, the cost thereof would not equal the cost of mining the shale, which amounts to four shillings per ton, and, therefore, if we obtain from the sewage products, which are as valuable as those obtained from the ton of shale—the process still remains on a remunerative basis.

The oil obtained is neither so large in quantity nor so good in quality as crude shale oil, and would not be worth more than 1½d. per gallon, for carburetting purposes, but the yield of ammonia would be nearly double that obtained from shale, whilst the residue, when ground, would certainly be valuable as a cheap cement, and quite good for the purpose of making concrete.

The yield of one ton of sewage cake containing, say, 15 per cent. of water would be roughly as follows:—

	£	s.	d.
20 gallons crude oil at 1½d. per gallon	...	2	6
80 lbs. ammonia sulphate, 1½d. ...	...	10	0
10 cwt. of residue suitable for concrete	...	5	0
	17	6	
	£	s.	d.

The cost of obtaining the above would approximately be as follows:—

	£	s.	d.
Drying 2 tons of sewage cake, say 2s. per ton for coal used, in addition to the waste heat derived from retorts	...	4	0
Cost of distilling and producing the crude oil and ammonia	...	4	6
Cost of crystallising the sulphate of ammonia, and cost of sulphuric acid necessary	...	2	6
	11	0	
	£	s.	d.

The amount of ammonia is taken at much less than that really obtained from the process, even when working with a very imperfect apparatus, and the value of the residue is certainly taken at a very low figure. The proper method of really testing the process would be to erect a bench of, say, 10 Young and Bilbey's retorts, capable of passing about 30 cwt., or 2 tons, of shale in 24 hours each. With sewage very possibly a little more might be got through.

The cost of these may be taken at from £55 to £65 each, and there is no doubt that by the use of these retorts that a much higher yield of ammonia would be obtained.

Following up my own experiments I had a consignment of pressed cake sent from Glasgow to a large shale oil works, where, by the courtesy of the heads of the works, they carried out a distillation for some of the pressed cake in their experimental works with most satisfactory results, as you can see from the return they certified to me from their tests. The results they got were as follow, from the cake as received:—

Moisture	...	...	71'335
Organic Matter	...	...	10'210
Ash	...	...	18'455

100.000

On distillation in experimental retort, in presence of steam, the following yields were obtained:—

Oil (lbs. per ton)	...	11'779	41'094
Sulphate of Ammonia (free) (lbs. per ton)	...	19'884	69'367
Total (lbs. per ton)	...	24'486	85'421

It will be observed these figures are not mine, but those from a flourishing industry which makes the greater portion of their money out of the sulphate of ammonia produced; and in their experiments in an unsuitable retort, adapted for the distillation of shale, they succeeded in getting some fifty pounds of sulphate of ammonia per ton more out of the sewage contents than with shale; this does not take any account of either the gas, some 4,000 cubic feet per ton of cake, produced, nor yet the oil or the residue of the combustion on which, properly treated in the retort, yields a valuable resultant in the form of cement. In dealing with the sewage on a large scale, I should propose that the retorts be set up in benches in a manner similar to a shale works, only differing slightly in construction to allow of the spent residue being drawn from time to time, the gas could be used for firing the fresh charges, and also the boilers necessary to produce steam for injection into the retorts, for the purpose of procuring the largest yield of ammonia. The oil is so small in quantity, and so valueless in price, that its principal use would be for carburetting a certain proportion of the produced gas for the purpose of illuminating the works.

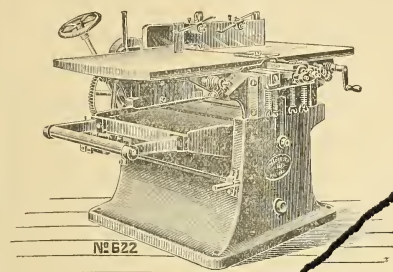
The few words I have said are not put forward other than as a record of experiments carried out with a fair amount of success, and now offered with a view of getting the opinions of those more able than the author, and to draw attention to a most valuable matter for utilisation, and which at present is either a danger and a nuisance or is thrown away.

	£	s.	d.
To total cost of getting 69,808 tons of Shale equal to 4s. per ton	...	13,994	0 0
„ Sulphuric Acid required equal to 6s. 5d. per ton	...	1,945	0 0
„ Coal, 1s. 3d. per ton	...	4,403	0 0
„ General Repairs, 4s. 5d. per ton	...	1,394	0 0
„ Wages, 1s. 8d. per ton	...	5,906	0 0
„ Expenditure on horse labour, &c., expenses, commission to managers and clerks, salaries, &c. Taxes and surface damages, 4s. 5d. per ton	...	1,242	0 0
8s. 2½d. per ton	...	28,884	0 0

	£	s.	d.
By Price of 2,555,680 galls. of Oil produced from 69,808 tons of Shale (or 36.60 gallons per ton)	...	28,842	0 0
„ Price of 11,179 cwt. of Ammonia Sulphate, 13s. 11d. per cwt.	...	7,801	0 0
„ Price of 80,661 galls. Naphtha	...	458	0 0
	37,101	0 0	

The profit derived under each head may be held to be as follows:—

Oil	£28,843	£25,268	£3,576
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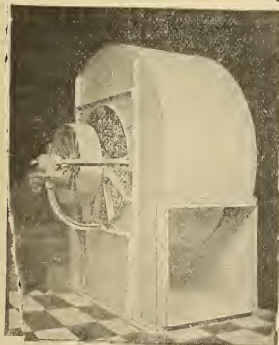
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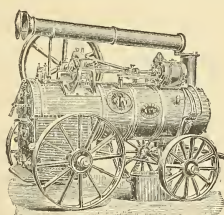
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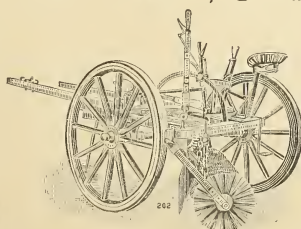
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[Estab. Jan. 1859.]

No. 991—Vol. XLIII.

HEAD OFFICE

APRIL 24, 1901.

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TOPICAL TOUCHES.

The memorial statue to the late Lord Plunkett, Archbishop of Dublin, was unveiled the other day by His Excellency the Lord Lieutenant. It is placed in Kildare Place, and is an exact likeness and fine piece of work. The pedestal was designed by Mr. T. M. Deane, Architect.

We wish some public spirited citizen would blow up the statue of Tommy Moore some dark night. It is a disgrace to the memory of Ireland's most famous poet and to the city of his birth.

Mr. Anthony Scott, M.S.A., has been appointed by the Society of Architects Honorary Secretary for Ireland.

To-day the North Dublin R.C.D. receive tenders for a further lot of cottages under the Labourers' Acts.

The Castleblaney R.D.C. advertise for tenders for fifteen cottages.

"Ballybay pumps" caused a big debate at a recent meeting of the Council.

The paper on Sewage Disposal read before the Institute of Civil Engineers by Mr. Marmaduke Purcell, C.E., and published by us *in extenso*, continues to excite a good deal of discussion in Engineering circles in the city. In view of the enormous outlay now being incurred by the City of Dublin for the disposal of its sewage by deep sea deposit, the opinion is freely expressed that Mr. Purcell's scheme at least merits careful investigation by the Corporation, for if his theories be correct—and they are accompanied by every element of probability—it would mean an enormous saving to the ratepayers. By the way we note that the Board of Works declines to sanction the Electric Lighting scheme until the efficiency of the methods proposed is more clearly demonstrated, and the Board censures the Corporation for beginning work without it authority.

Mr. Edwin O. Sachs, the well-known architect who is responsible for the re-modelling of Covent Garden, expects to issue a second edition of his great book, "Modern Opera Houses and Theatres," soon after Easter. It is amusing for him now, when he holds the position of leading authority on the subject, and his book is the only standard work throughout the world dealing with matters theatrical and operative so far as architecture, building, and equipment are concerned, to look through the letters that he received when the scheme was first mooted and the prospectus of his work was prepared. Sir Henry Irving and the late Sir Augustus Harris were the first two subscribers. There were several quaint refusals; Mr. Penley "hadn't time to sign a cheque." One of the principal officers entrusted with the safety of our theatres had "quite sufficient lumber on his book-shelves already," and a certain member of the Institute of British Architects "didn't like to see books written by youngsters of twenty-five."

Among the other curious letters which Mr. Sachs received was one from a well-known decrier of plays and playgoers, who condemned author, publisher, and printers alike for their "most unholly effort in encouraging theatre-building, and, more particularly, the safety of theatres, as every playgoer deserved to be burnt in his seat." The names of the Emperor of Japan and the Gackwar of Baroda appeared

among the distinguished foreign subscribers. The Continental list was headed by prominent German authorities. There were only two women subscribers in all, a well-known Italian countess and Mrs. Lane, of the Britannia Theatre. Mr. B. T. Batsford is the publisher of the book.

The method adopted by the Victoria Memorial Committee for securing a design has come in for a vast amount of adverse criticism, it being generally contended that the design should be the outcome of a competition open to the world. The Committee have made their choice, however, and it only remains to hope that the best man may win. Having regard, however, to the circumstances of the last year of our late Sovereign's life, it would not, we believe, be unacceptable to the public were an Irishman to prove the successful competitor.

Mr. T. G. Jackson, R.A., who is one of the selected architects for the Queen Victoria Memorial, is a Londoner by birth and a pupil of Sir Gilbert Scott. He was the architect for the new Examination Schools at Oxford as well as for the restoration of the Bodleian Library, the new Radcliffe Library, new buildings for Brasenose, Lincoln, Corpus, Trinity, Balliol, and Hertford Colleges, the new Sedgwick Memorial Museum in course of erection at Cambridge, and other works at the Inner Temple Hall and at Drapers' Hall in Throgmorton-street. He was also the architect for the restoration of Great Malvern Priory and Bath Abbey, as well as for new school buildings at Westminster, Rugby, Harrow, Radley, Uppingham, Brighton, and Cranbrook. Mr. Jackson is the author of numerous publications, the best known of which perhaps is his "Modern Gothic Architecture," published a good many years ago.

Mr. Ernest George, A.R.A., another of the selected architects, is also a Londoner by birth, and the winner of two gold medals for architecture. He is the architect of many well-known country seats, such as Edgeworth Manor, Gloucester; North Myms, Herts; and Studleigh Court, Devon; besides several London thoroughfares, amongst which may be mentioned Collingham and Harrington gardens and houses in Cadogan and Berkeley squares.

One of the most successful of Mr. George's work is the charming mansion he did for Lord Stalbridge in Dorsetshire. The Architectural Association was very hospitably entertained there in 1890.

Mr. Aston Webb, A.R.A., the third English competitor, has, perhaps, the biggest record of all. He is probably the most successful architect of the day in big competitions, his latest and greatest success being the South Kensington extension. He is the architect of the new Blue-coat School, a most important work; while his beautiful little addition to the United Service Institution in Whitehall ("Inigo Jones" Banqueting Hall) is known to all visitors to London. The architect frankly abstained from any effort to assimilate the detail with that of the great master's work, and therein showed his excellent taste and good sense.

Dr. Rowand Anderson, L.L.D., the Scottish representative in the Competition, has done beautiful and scholarly work. One of his most successful efforts is the MacEwan Hall, Edinburgh.

Sir Thomas Drew, P.R.H.A., the Irish competitor, who completes the list, is so well-known to all our readers as to need no introduction from us.



Armagh.—**THIRD PRESBYTERIAN CHURCH.**—This church was re-opened for divine service on Sunday last, after undergoing extensive and much needed improvements. The old choir gallery has been removed, the pulpit set back, and accommodation provided for the choir in front of the pulpit, the old bench ends have been cut down and made more in keeping with modern ideas. This section of the work has been performed in a thorough and efficient manner by Messrs. D. P. Martin and Co., builders, Armagh. A complete system of heating has been satisfactorily carried out by Messrs. Musgrave and Co., Belfast, and an entirely new installation of incandescent gas lighting by Messrs. H. Hillock and Co., Armagh. The entire interior of the church has been painted and decorated by Mr. James Maxwell, master decorator, of Armagh. The several firms engaged in the undertaking deserve to be congratulated on the manner in which they have carried out the work entrusted to them. The polished brass pulpit lights, pillar lights to gallery, and wall brackets, were supplied by Messrs. Meynell and Sons, Wolverhampton; the polished brass suspension fittings, bracket lights to gallery, arc lamp in vestibule, incandescent burners and globes, by the Welsbach Incandescent Gas Light Co., London and Belfast. The entire work from its beginning in November last has been under the supervision of Mr. H. C. Parkinson, architect, to whose artistic taste and generous Christian spirit (for he did all his work free), Dr. Meharry paid an eloquent tribute both morning and evening.

Ballycastle.—On Thursday Mr. P. C. Cowan, Local Government Board Inspector, held a local inquiry respecting an improvement scheme in pursuance of the Labourers (Ireland Act), in the Boardroom of the Workhouse here. There was a large attendance of the district councillors, and also of farmers and labourers. The District Council was represented by Mr. John Boyle (of Messrs. P. and J. Boyle, solicitors), Mr. T. J. O'Neill, C.E., Belfast, the Board's engineer, was also in attendance, and submitted plans and estimates for labourers' cottages as follows:—For single cottages, £105; double do., £170; three in a block, £252; and four in a block, £334. Mr. Cowan having examined Mr. M'Gill, clerk of the Council, regarding the representations, evidence was taken at length regarding the several applications which were from the electoral divisions of Arnoy, Ballintoy, Croagh, Cushendall, Cushleak, Dunseverick, Ramoan, Glonmakeeran, and Reil Bay. The total amount asked to be expended in the erection of cottages was £3,401 10s. Dr. James M'Ilroy, Ballycastle district; Dr. Joseph Danlop, Croagh district; and J. W. Fogarty, Cushendall district, gave evidence as to the unsanitary condition of labourers' dwellings in their various districts.

Belfast.—**THE BOARD OF GUARDIANS.**—The committee, in their report, recommended that the sketch-plan of the dining-room and dayroom accommodation for the infirm in Corry's Buildings be adopted, and the committee recommended the Board to instruct Messrs. Young and Mackenzie to prepare a plan, specification, and estimate in accordance therewith; the floor of the dining-hall and scullery to be granolithic, and that of the reading-room to be wooden, the entire building to be heated by exhaust steam from the laundry. Seats to be provided with backs, as this proposed new building is intended to accommodate the feeble, infirm class, which are now separated from the others, and located in Corry's Building. The committee also recommend that Mr. Mackenzie be instructed to prepare plans, specifications, and

estimates for the alteration of the apartments lately occupied by Mr. Ball, assistant master, and now vacated, also the rooms and stairway adjoining, to enable same to be utilised as accommodation for infirm men.—Mr. Chisholm moved the adoption of the report.—Mr. Walker seconded, and pointed out that the work would have to be carried out immediately, as the stairs were in a dangerous condition.—The Chairman suggested that one estimate should cover the whole work.—Mr. Walker agreed, and the report was adopted.

The Albert Memorial has for some time past been noticed to be considerably out of plumb. Being, like all Belfast buildings, erected on piles, the remedying of this defect presents much difficulty.

Carrigans.—The L. G. Board wrote requesting that they may be informed of the steps taken by the Guardians with a view to the establishing of a dispensary depot at Carrigans, in the Carney dispensary district. The letter was referred to the next Board.

Omagh.—The Visiting Committee suggested several alterations. The clerk submitted an estimate from Mr. Donnelly, the architect, stating that the cost would be £105 7s. 3d. for the proposed alterations. The Chairman thought that the architect should be asked to modify the plans. It was eventually decided to refer the matter to Mr. J. L. Donnelly, C.E. A letter was received from the Commissioner of Public Works stating that the Lords Commissioners of his Majesty's Treasury has been pleased to sanction for the erection of labourers' cottages in the rural district of Omagh, a loan of £18,200, payable in fifty years, on interest at the rate of $3\frac{1}{2}$ per cent. Several tenders for the erection of cottages were read and considered.

Wexford.—An enquiry was opened last week by a Local Government Board Inspector for the purpose of ascertaining how the passing of the Local Government Act had affected the position and duties of the County officials and their claims to increased remuneration.

It will be remembered that the Local Government Board, on the framing of the Act, increased the salaries of the County officials generally against the wishes of the Local Authorities. The Wexford County Council determined to test the legal rights of the Local Government Board, and brought an action to compel them to hold an enquiry as a precedent to granting increases of pay. The Local Government Board joined issue, the Court of Queen's Bench decided against the County Council, and affirmed the right of the Local Government Board to peremptorily fix salaries. On appeal, the Court of Appeal reversed this decision, and the present enquiry is a direct result of the suit.

THE INFLUENCE OF ITALIAN MEDIEVAL ART.—Monsieur Engene Muntz is well-known to the English public as the author of the life of Leonardo da Vinci, which had so great a success in England. In his new book Monsieur Muntz shows himself to be not only an interesting art critic, but a student of history and a discoverer, as it were, of the methods of bygone civilisations. By means of a minute study of the sanctuaries of Northern Italy, and through a careful examination of the art treasures of the time, he has been able by degrees to reconstruct the movement and expansion of the medieval monastic orders, and thus explain the work they accomplished. He has drawn from their long oblivion the names of such men as St. Gualbert, St. Romuald, and St. Francois. He has shown us that, while the Medicis aided and favoured the high intellectual culture of their time, the various contemporary municipalities organised a clever system of popular teaching, as well as the whole mechanism of an *Assistance Publique*. Through the art treasures of Pisa, Sienna, and Florence, the whole influence of medieval art has been re-explained, and Monsieur Muntz shows us how the effort of this period has aided in the development of our own modern civilisation.—CLAIRE DE PRATZ (in the *Westminster Gazette*).



Armagh.—MORE MISTAKES IN THE SEWERAGE.—A special meeting of the Armagh City Council was held on Wednesday, Mr. M. Donnelly, J.P., Chairman, presiding. The principal business was to pass a resolution about a change of ground leading to the disposal works at Drumcainr. It appeared that the road as originally arranged interfered with Messrs. Wilson, and a diversion was authorised. This change, however, necessitated the taking of different land from that originally intended but of the same area. The landlord agreed to give the same quantity of ground in a different place, and the Council now passed a resolution ratifying the change and specifying its position. The resolution stated that this was "necessary owing to an error of the engineer." Mr. Lennon—That is rather a bluff way of putting it. Mr. Maxwell—It is the engineer's mistake, and I like to call a spade a spade. Mr. Lennon—Sometimes calling it a shovel does as well. Clerk—But it is his fault. Messrs. O'Neill and Cassidy said it was certainly Mr. Peddie's mistake, and it was disgraceful that these blunders were occurring. It was mentioned that another blunder had been discovered, and a Councillor asked how Mr. Peddie would explain it. Mr. Cassidy—He will say it is the Clerk's fault. (Laughter).

Coleraine New Waterworks.—The new waterworks for Coleraine were formally opened by Mr. Hugh T. Barrie, chairman of the Urban Council, who was presented by Mr. John Heggarty (Messrs. Heggarty and Gault, contractors for the works), with a splendid gold key suitably inscribed, and purchased from Messrs. Gibson and Co., Limited, Belfast. Subsequently the members of the council, contractors, the engineer (Mr. Given, C.E.), and several friends were entertained at luncheon by Mr. Barrie.

Clonmel.—CURIOUS COMPLICATION OF AFFAIRS AT THE WORKHOUSE.—The Board of Guardians had under consideration the proposed sanitary scheme for the Workhouse. The Local Government Board wrote asking for the written consent of the majority of the guardians to the expenditure. The scheme has been prepared by Mr. Hackett, the County Surveyor, and is estimated to cost £5,200. In 1897 plans of another scheme, estimated to cost £30,000, were prepared by Mr. Timothy Beary, of Clonmel. On these plans Mr. Kaye-Parry, at the request of the then Board, reported. These plans appear to have been abandoned in favour of Mr. Hackett's scheme. Mr. Gardener, Mr. Parry's assistant, became Quantity Surveyor to the Board in respect of the sanitation of the Workhouse. Subsequently Mr. Gardener visited the Workhouse as a Local Government Board Inspector, and in him the Clerk recognised the Guardians' own Quantity Surveyor, whereupon the following remarkable discussion took place:—Hon. Mrs. de la Poer: Has the Medical Inspector reported on the plans? Clerk: The Medical Inspector has nothing to do with them. It is the Engineering Inspector in Dublin who sees them. They were sent back with a few small revisions.—Chairman: Did Mr. Gardener, the Architectural Inspector stay long in the house here, when he came to inspect it? Clerk: About an hour.—Chairman: It was not very long to make up his calculations.—Master: He knew the house well, and went round with the carpenter whom he asked for to go with him to show him round.—Chairman: And you did not take that as an insult, considering the importance of the matter in hands.—Clerk: Mr. Gardener is the quantity surveyor, who drew up the quantities for your own sanitary scheme, and he knew all about the house and the plans.—Chairman: And of course he

would like to see the sanitary scheme, on which he gets 1½ per cent., go on.—Clerk: I did not like to say anything about it, but I was never so much astonished.—Mr. Guiry: No, we are getting at the right part of the business now. I hope the Press will take a note of this.—Mr. E. Nugent: The asylum inspector who visited this house was our quantity surveyor.—Chairman: Yes, he visited this place and then attended the asylum meeting, where the proposed exchange was rejected, on the ground of high expenditure.—Mr. O'Neill: I think we ought adjourn this matter.—Hon. Mrs. de la Poer: I think we ought to ask the Local Government Board if they are acquainted with the facts of the case. It is an extraordinary thing.—Chairman: It certainly is. He was only our quantity surveyor.—Mr. Guiry: And we were to pay him 1½ per cent. on our sanitary scheme.—Mr. Dwyer: I think we ought burn all the papers and get the thing done over again.—Chairman: We have Mr. Hackett's plans already.—Mr. O'Neill: I propose we adjourn the matter for further consideration as to the expenditure.—Hon. Mrs. de la Poer: We know what the expenditure is.—Chairman: Yes, it was cut down from £7,000 to £2,500.—It was now proposed by some of the guardians to in turn abandon Mr. Hackett's scheme. Ultimately the discussion was adjourned.

Laragh.—The Clerk commenced the reading of a letter from Mr. M'Kean, J.P., Laragh, as follows:—"I, as a ratepayer, beg to draw the attention of the District Council to the bridge lately erected under the County road in this immediate neighbourhood (townland of Laragh), and to protest against any money being paid to the contractor unless the terms of the contract are completed." Clerk—I think the specification was prepared wrongly in the first instance. I think the surveyor said as much. Mr. L. McDonnell—"The eye of the bridge, I think, was raised too high. Clerk (continuing):—"Anyone with the most moderate knowledge of such matters can see the contract was not fulfilled. The quality of the sand used and the proportions mixed with the cement were such that the late frosts caused the pointing to fall out in some places." Mr. M'Nally—We have nothing to do with that. It is a matter for the county surveyor. The letter was referred to the county surveyor accordingly.

Omagh.—A letter was received from the Local Government Board requesting the form of application for sanction to a loan in connection with the proposed sewerage scheme. In reply to this, Mr. J. L. Donnelly, Urban Surveyor, wrote forwarding the plans and specifications. The matter was referred to Mr. Shields. A letter was read from Mr. Swiney, C.E., Belfast, stating that his charge for inspecting the waterworks would be £5 5s. per day and expenses. After some discussion, Mr. Hackett moved that they employ Mr. Swiney at the fee mentioned. Mr. Phillips seconded the motion, which was passed.

HOUSING OF THE POOR IN LONDON.—By eighty-two votes to twenty-one the L.C.C. last week sanctioned the largest housing scheme yet undertaken by a municipality. The Council resolved to purchase an estate at Tottenham of about 225 acres for £91,500—or £400 per acre—on which it is proposed to build cottages for 42,000 people. The division was taken on an amendment, somewhat ingeniously framed, instructing the Housing Committee to build cottages which could be let at such rents as would bring them within the means of working men earning less than 30s. per week. Nearly 900 of the four and five-roomed cottages, as a matter of fact, will, according to the scheme, be let at rents of 6s. and 6s. 6d. per week, a figure which would, as things are, place them within this category. But of course the greatest value of the scheme is to be found in the relief which it would give to the congestion in the poorest part of London, and this relief is by no means so hypothetical as Mr. Peel and other Moderate members suggested. From another point of view, the greatest significance attaches to the Council's action in the support which it gives to the principle of the municipal ownership of land and the "unearned increment" that attaches to it.

THE BUILDING BYE LAWS.

Our contemporary, *Country Life*, continues the excellent and practical series of articles on the Building Bye-laws, to which we have more than once made reference. In one article the absurdity of the laws regulating cottage and other windows is made manifest. "To light a room well," says *Country Life*, "you must consider its capacity as well as its height." The bye-laws only contemplate one cast-iron contingency. They have helped to destroy every element of the picturesque in our latter-day cottages, and nowhere more so than in Ireland. The thatchers' trade is fast becoming a lost art.

Again, "where the bye-laws are wrong is in applying the same rule to every class of house—they are in every respect too sweeping, and would not have been so bad had building experts—that is to say, architects—been called into consultation before they were drawn up."

Projecting timber windows are prohibited, but the city of Chester is one of the cleanest and most progressive towns in the Kingdom; yet if the bye-laws were adopted it would be almost necessary to raze it to the ground. We cordially echo the sentiment, "long may it be before Chester adopts the 'model' bye-laws." The recent numbers of *Country Life* also continue the superb illustrations of garden craft. Eaton Hall, Cheshire, is last week's subject. Garden craft is now universally treated as a branch of architecture, and these articles are an education in themselves.

PROPOSED DEPARTMENT OF TENEMENT HOUSES IN NEW YORK.

We are glad to read the views of one sensible man on the proposed Department of Tenement Houses in New York. Everyone knows the old trick of New York politicians, who, when somebody complains about the inefficient administration of some department of the city government, raise a virtuous outcry, establish a new department to regulate and reform the first one, fill it with officials of the same sort as those of the first department, who draw their salaries punctually, pay their percentage of them to the Tammany rulers, and perform their duties in the same manner, and with the same results, as the officials of the original department whom they are appointed to watch. In the case of the Department of Tenement Houses, as a correspondent of the *New York Times* points out, the only result of the creation of such a branch of the government, under present conditions, would be to saddle the taxpayers with an enormous expense for paying the salaries of a horde of new officials, appointed by Tammany Hall to "secure greater efficiency" in the execution of laws which another large body of officials is already employed, and paid to enforce. No one pretends that the law does not give to the officials of the Building Department and the Health Board ample authority to compel strict compliance with the laws. That they do not compel such compliance is notoriously due to inefficiency and corruption, and the real purpose of creating a new department to do the same work is, in all probability, to strengthen Tammany Hall by placing at its disposal a new and plentiful crop of "plums" in the shape of salaried positions and opportunities for extortion, to be distributed among its "workers," at the same time that the rich field of corruption in connection with building interests, which is not, even yet, worked to its utmost limit, is open to cultivation with fresh resources. As the correspondent well says, the way to improve tenement house construction in New York is to reduce taxation, and remorselessly pursue official corruption. No rule of economics is better established than that, in the end, taxes on real estate are paid by the tenants, in the form of rent. Every penny taken from the owner of tenement houses by taxation, or extorted from him by corrupt officials, or paid by him in the form of bribery to persons who cannot be induced to do their duty without it, comes ultimately from the pockets of the poor working people who are obliged to occupy the tenements because they must live near the place where they are employed. Any reduction in taxation would at once be

reflected in rents, through the competition of owners of tenements, at the same time that, with honest enforcement of the laws, the conscientious owner of such property would be enabled to offer his well-built and wholesome dwellings in competition with the miserable wretch who bribes inspectors to keep out of the way, while he constructs the illegal buildings from whose helpless tenants he extracts, by exposing them to the misery, sickness, and danger of death from which the law is intended to protect them, the price of blood which he divides among the still more infamous officials who share his crime.—*The American Architect*.

LAW CASES.

SANITARY WARRANTIES.

The case of *De Lasalle v. Guildford*, which was decided by the English Court of Appeal at the end of last sittings, is likely to become a leading decision. In the first place, it decides that a statement that the drains of a house are in good order is a warranty, for it is a statement of a fact of which the buyer or lessee is ignorant, and on which the latter is likely to exercise his judgment. The Court further decided that such a warranty is collateral to a lease in which no special terms are inserted as to the condition of the drainage of a house, and that it can therefore be put in evidence, and that if it is proved that it is broken, the lessor or vendor is liable for any damages which can be proved to result from this breach. The decision was in many respects one full of legal technicalities, for in the first place, the difference between a warranty and a representation is not very clear to the lay mind. Of course, in every case it has to be ascertained whether a statement is a representation or a warranty. If it is a warranty, its mere breach will carry damages; if it is a representation, it must be shown to be fraudulent. The importance of the decision lies in this, that there is now a considered judgment of the Court of Appeal which is distinctly in favour of the buyer or lessee—in other words, a vendor or lessor is liable if he states the sanitary state of a house is good and it proves to be otherwise.—*The Builder*.

THE PEMBROKE U.D.C. v. WHITTY.

WHAT ARE THE SANITARY POWERS OF A LOCAL AUTHORITY?

This case, heard before Mr. Swifte at the Dublin Metropolitan Police Courts, Southern Division, during last week, brought up several very interesting points. The suit was a complaint by the Sanitary Authority against Captain R. C. I. Whitty in respect of a number of cottages known as Shaw's lane, off London Bridge-road. The Council alleged that the cottages were so out of repair, and lacking in sanitary accommodation, as to constitute a nuisance within the meaning of the Public Health Act. On behalf of the defendant it was sought to be proved that the mere fact of these houses needing certain superficial repairs did not, *per se*, constitute a nuisance. Furthermore, that the Public Health Act expressly stipulated that earth closets might be used as an alternative to a water carriage system; and Mr. Johnston Roberts, on behalf of the defendant, argued that a privy was an earth closet within the meaning of the Act, inasmuch as the Act expressly defined an earth closet to be any receptacle for fecal matter in which earth was used as a deodorant and disinfectant; that admittedly the privies were capable of use, and, as a matter of fact, were used as such. Furthermore, in respect of the drains used for the conveyance of rain and surface water, inasmuch as these drains were used to convey the drainage of more than one house, they thereby became "sewers" under the Public Health Act, and a municipal charge, and that as such the Council was bound to maintain them. Mr. Johnston-Roberts cited the case of *Travis v. Utley* (Q. B. Reports, 1894)—a case which, having regard to its great importance, is scarcely so well known as might be expected. The judges, in giving judgment, speaking of the section of the Act, stated "that words could not be plainer." The Sanitary Inspector gave evidence on behalf of the Pembroke Council, and Mr. R. M. Butler, architect, was examined on behalf of the defendant, Captain Whitty. The Magistrate said that, in view of the importance of the issues raised, he would adjourn the case, in order to give the Pembroke Council an opportunity of considering their position, and, if they thought proper, arguing the matter.

THE INFLUENCE OF EDUCATION ON NATIONAL COMMERCIAL PROGRESS.

AN ADDRESS TO THE ST. JAMES'S GATE INDUSTRIAL ASSOCIATION BY MR. P. J. O'CONNOR, M.A.

Recently there has been made in our city a most interesting experiment. Messrs. A. Guinness, Son, and Co., of the St. James's Gate Brewery, have established an Industrial Association amongst their employees, and in connection therewith are providing the working lads in their employ, in the laboratory and engineering departments, with the fullest facilities for education, both technical and general. Messrs. Guinness, with their usual enterprise and thought for the welfare of their employees, secured the best teachers to be had, and, sparing no expense, they placed Mr. P. J. O'Connor, M.A., well known in Dublin and Cork as a distinguished educationalist, at the head of the venture. So far the scheme has been successful beyond what could be expected—a result, no doubt, largely due to the personal interest which Mr. O'Connor has taken in the matter. Mr. O'Connor has had a phenomenally successful record as a mathematician, as a teacher of military tactics, and as a "grinder" for the Staff College, etc., and has always kept himself in touch with the latest developments in the science of teaching. He is also the teacher of Mechanical Drawing at the Dublin Municipal Technical Schools. In the course of his address Mr. O'Connor said:—

Education in Ireland.

No subject is dry when once an interest is felt in it, and this subject of education is one which should interest everybody. His remarks intended to show the actual position of affairs in education, and to point out, as far as his judgment and experience dictated, the advantages or otherwise of the present system of instruction.

The Primary Schools and the iniquitous "Results" System.

It is unfortunate that the Primary Schools in this country were, up to a few weeks ago, worked upon what is known as the "Results" system. The teacher's income depended upon his capacity for hitting on questions likely to be asked, and which were taught to his pupils as mere rote knowledge, with scarcely an attempt at explanation. By this system as much as possible of the practical value of the very limited programme of these schools was lost. There was very little quickness or accuracy in calculation—no rational knowledge of the subject-matter of their reading books, no scientific training of any kind. Instead of accuracy of thought there was confusion of ideas, even on the most simple subjects, and very inadequate preparation for deriving full advantage from the practical training of the workshop, the warehouse, or the farm, where the boy from the primary school had in after life to make his livelihood. The system was now somewhat altered—"results," had been done away with; the modern practical tendency was to be followed, and he hoped especially as the teachers and inspectors are excellently qualified, capable and efficient, in their several capacities, that the instruction will tend more than it has done to prepare boys for the practical work of life.

The Intermediate Education Act.

There was another and a more ambitious system—the Intermediate—worked also on the results principle which, while it afforded an admirable education for those who intended to pursue their studies at a university, or who were destined for a professional career, was very little suited to the requirements of the average boy. The average boy who goes to business has just barely time to go through the preparatory or junior grade, and the instruction he receives is of a very superficial kind—and therefore quickly forgotten. Forgetting a subject means taking no further interest in it; therefore as far as it influences a boy's life, it is *valueless*. Neither can a subject superficially learned, and soon forgotten, become the basis of further development. This system is also being mended. The improvements contemplated have been sought for by even the teachers themselves, who have striven to give it the modern practical bent, by drawing a strict line between the classical courses to be followed by those intended for the university and professions, and what is called the modern side.

Legislation.

It is very well for education that one of the most important duties of the Government is to legislate for its improvement. This legislation is constantly going on. What appears good to-day is set aside to-morrow; new ideas are being adopted and tried, and it seems that we are never to arrive at a system calculated to produce the best results. But all these struggles and all this uncertainty denoted progress. If a nation wished to preserve its prestige and prosperity it must continually work to extend its power and influence. There is no standing still, and if the motion is not forward to more power and progress it must of necessity be backwards. It was the same in the industrial life of a nation which was dominated and directed by education and scientific knowledge. There is no pause; we must advance or retreat, and an advance can only be effected where the intellectual equipment of our industrial army is of the most efficient kind. The educational enactments passed by Parliament for both Great Britain and Ireland for the past two years are of the greatest importance, and are calculated to encourage the education which will improve the capacity in a broad sense of those upon whom our industries depend.

Education—Industrial, Commercial, and Technical.

He did not especially allude to the teaching of trades, or to industrial or commercial education, but to the education which desires to develop increased dexterity of hand and eye amongst the young, which is especially useful to those who have to earn their own livelihood, and at the same time improve rather than hinder their general education—the education which seeks to bring about more widespread and thorough knowledge of those principles of science and art which underlie so much of the industrial work of the nation—in short, the education which is directed towards the actual needs of the country.

The Department of Technical Education.

We had now by Act of Parliament established in this country a Department of Technical Education and Agriculture, but unfortunately we had in Ireland very few men with knowledge and experience of technical education, so that it is possible that if competent and practical men are not placed at the head of the new department, that the full benefits of the Act will be lost. In Ireland our education was only in an experimental stage. In Great Britain, it rested on a firm foundation, and showed more progress and success every year. Committees willingly taxed themselves to establish schools and to provide instruction for all classes having due regard to the special wants of each particular community.

What England is Doing.

As an example—In the mining districts of Nottingham and Wigan the working miners are instructed on a variety of subjects bearing more or less directly on their actual labour. A miner who is anxious to improve his position is provided ample opportunities of doing so. He is first instructed by means of popular lectures on such subjects as the atmosphere, underground fires, the world before the deluge, why miners should be technically educated, history of coal mining, the safety lamp, the steam engine, the theory of heat, &c.

He may if he desires attend lectures, and finally pass for colliery manager. The educational ladder is set for the miners, and it is gratifying to be able to say that a considerable number of them have climbed it. Other trades and industries were similarly treated. Employers shorten the terms of apprenticeship to properly educated lads, and though this anxiety for education is justified by the material advantages which spring from it, yet altogether apart from considerations of pounds, shillings, and pence there are intellectual and moral values of supreme moment which still further justify it most amply.

Dublin.—The Richmond Surgical Hospital was opened on Monday last by His Excellency the Lord Lieutenant. The hospital, which is the most recent and complete in Ireland, was designed by Messrs. Carroll and Batchelor, Architects, Merion-square, Dublin.

THE ART OF DESIGNING SMALL HOUSES. AND COTTAGES.

BY BARRY PARKER AND RAYMOND UNWIN.

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A Lecture delivered before the Society of Architects, and

Published in the Official Magazine of the London

Society.

The Fireplace.

The fire is designed to make either a closed cooking stove or a comfortable open fire to sit round, as required. Unfortunately it has to be set in a chimney breast, but by filling the recess each side with cupboards, book shelves, and coal-box, and not carrying the seat beyond the face of the breast, part of the effect of this is removed, and some, at any rate, of the charm of an ingle is secured. The floor of the recess is tiled too, which enhances a little the feeling of sitting on the hearth, and at the same time affords the most easily cleaned floor for the working corner. We are enabled to get a sheltered garden seat by reducing the width of the recess to a more comfortable dimension. The ingle is further defined by an archway, on one side of which is fitted a writing desk with closing flap, drawers, and book-shelves, and on the other the piano is designed to stand, occupying part of the space under the rising stairs, the remaining portion being taken up with music cupboard and book-shelves opening into the living-room, and a store cupboard opening into the kitchen. A second lounging place is provided by a wide low window seat in the main window, and between that and the meal table is fitted a small side table with cupboards and shelves to hold the oddments used at the table. Fixed seats are arranged for two sides of this table, one having a high back to screen it from any draught coming through the outer door.

One Living Room and a Kitchen.

To this one good room is added a kitchen for the more dirty work, fitted with a small range; a good cupboard for coats and hats by the entrance; a coal place and larder. Upstairs are four bedrooms, one being rather narrow has a bed-recess taken off the larger room to help it, and as it is over the low ceiling of the ingle, it gets the advantage of extra height under the sloping roof, and thus the low ceiling, which adds so much to the feeling of cosiness in an ingle is made to help the bedroom over. Where some such arrangement as this is not possible, we sometimes utilise storage cupboard, and we often take advantage of it for ventilating purposes, by bringing fresh air into the room, slightly warmed by passing behind the fire, and delivering it over the opening to the recess, where it is distributed with the least possible draught. Where an outlet into a flue is desirable to supplement the exhaust due to the fire, we find this a very good place to arrange it. In a room with close-fitting iron casements, sufficiently well built not to leak excessively through the floors, skirting and door, the most frequent cause of a smoky chimney is the want of sufficient air supply, and some form of inlet is an absolute necessity. In bedrooms we have successfully arranged this through a hollow fender kerb in some places.

The Cottage Bedrooms.

All the bedrooms in this cottage are so arranged as to have a fairly comfortable corner between the fire and a window, where one can sit to read or write. A west aspect is obtained for the bath-room, and a linen cupboard warmed by the cylinder is provided.

Use Only Local Materials

Of the elevations I need only say that local random range stone is used for the ground story, while for the upper portion the need for obtaining four bedrooms over a house so narrow required the use of 9 in. brick walls which are rough cast in cement. To avoid the expense of dressed stone, and also to connect a little the two stories, all the windows have brick jambs and mullions, and the rough cast is carried down over them. The roof is covered with local stone slate.

A Cottage Living Room.

It is obvious that the living-room of this cottage could with much less trouble have been made a four square room with a fire at one end and a door at another, and might have been furnished with a mixture of kitchen and parlour furniture; but I shall have rather sadly missed the purpose of this paper should you not now feel, as we do, that life would be immensely more comfortable and more dignified in a room such as I have been describing, where each requirement has been considered and provided for, and where just the shape and arrangement have been given to it which seemed best to meet those requirements; where, moreover, all the furniture has been designed in keeping with its place and its purpose, so that there is no incongruity between the desk and the dresser, the piano and the plate rack.

Small Cottages.

Time will not permit me to refer in detail to any smaller cottage plans. But enough has, I hope, been said to make it quite clear that, whatever the size of the house, we think it should grow, both as a utilitarian plan and as an artistic creation, out of the real needs of the occupants; and that the art of designing small houses and cottages consists, not in following any accepted code of conventions, however useful these may be in their place, but in working out such a convenient and comely setting for the special life that shall be lived in them as shall enable that life to expand itself to the fullest extent, not merely unhampered by the building in which it is clothed, but actually stimulated by a congenial surrounding.

[It is not possible for us to reproduce the illustrations which accompanied this paper, but we understand that most of them will be included in a volume of lectures by the authors, to be issued shortly by Messrs. Longman, Green and Co.]

(Concluded).

A Large Railway Contract.—The Westinghouse Electric Company of Pittsburgh has been awarded the contract for the complete motor and control equipment of all the elevated lines of the Brooklyn Rapid Transit Company of New York. This system comprises over thirty miles of double track railway, which is one of the largest elevated rapid transit systems in America. This contract was awarded to the Westinghouse Company after a long series of trials and tests, each competitor furnishing a number of sample trains. These trials and tests extended over a period of nearly three years. We may mention that the other competing firms were the General Electric and the Sprague Electric Companies of America, each of which offered an electric system of multiple unit control in competition with the electro-pneumatic system proposed by the Westinghouse Company. The above result is of direct importance to English railways, as the Westinghouse system, which has been adopted by the Brooklyn Rapid Transit Company, is the same as that which the British Westinghouse Electric and Manufacturing Company, Limited, has proposed for operating the trains of the Metropolitan and the Metropolitan District and other underground railways in this country.

A singular bet is reported from Paterson, New Jersey, a carpenter and builder named Kirk wagering a wealthy brewer a thousand dollars that he would have his new carpenter's shop built in half a day. Kirk took a couple of days getting the material ready and laying it all, so that there could be little confusion. At one o'clock he lined up all his men and shouted "Go!" The men had been taught just what to do, and in a few minutes the framework was up. The plates were put on, and the rafters and the roof got there as if by magic. In less than three hours the sides were closed in and the windows and doors fixed. The rest of the time was spent inside in flooring and arranging the stairs. Before half-past five the building was completed, amid the cheers of the men, who were afterwards entertained by the brewer to a supper.

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A GRAVE PROFESSIONAL QUESTION.

Recently we made reference to the serious loss which the architectural and engineering profession, and particularly the junior element, sustains through the constant employment of highly-paid public officials on private works, and we instanced the County Surveyors, as architects of lunatic asylums, as a case in point. We publish in our correspondence column a communication from the Council of the Royal Institute of Architects (Ireland), addressed to Mr. R. M. Butler, in reply to a letter of his directing the attention of the Council to a correspondence on this subject then going on in the daily Press. The letter of the Council is one which, we venture to think, will hardly commend itself to the general body of the members. A most serious and important point arises; the Council is appealed to, and, instead of taking steps to protect the interests of the members, the matter is shelved—on the plea that it is no more an engineering question than an architectural one. Usually it is the aggrieved party who pleads—not the delinquent. The Council of the Institute apparently thinks that because a county surveyor poaching upon purely architectural works happens to have received more or less of a purely engineering training, and none of an architectural character, therefore the duty of ventilating such a grievance and bringing it under the notice of the proper authorities devolves upon the engineering side of the allied professions! Were one not accustomed to the occasionally childish arguments of the Council of the R.I.A.I., such a process of reasoning, truly worthy of one of "the brothers of Moon's" yellow-jacketed mandarins of the Celestial Empire—the land of the "upside-downs"—would cause surprise. As it is, the result need excite none. But the matter has a very serious and important aspect for the younger members of the profession, because it shows them that there is in Ireland no representative body to look after the interests of the profession as a whole. The Council elected for this purpose apparently takes no interest in matters of practical import. Its whole attention is occupied with questions of abstract policy, and more suited to a suburban debating society than to the representative body of an old and honourable profession. The utter stick-in-the-mud conservatism of the Institute prevents any real or useful work being done. It is not too much to say that during the past thirty years scarce a single useful or practical action has officially emanated from the Institute. The idea of professional or general education was, until quite recently, looked upon as a "fad," and those who advocated it "cranks."

The action of the Council in refusing in several instances to protect the interests of its members also opens very unpleasant and harmful possibilities. Amongst all reputable practitioners there are certain well-defined and easily-

understood rules of professional etiquette—for example, in regard to "standing together" in cases of objectionable competitions, canvassing for work, professional charges, etc. Now, many of these points of professional etiquette are observed by younger practitioners oftentimes at considerable loss and inconvenience to themselves. In this country they are, as a rule, loyally adhered to. Does the Council seriously believe that if it deliberately continues to neglect the very objects of its existence, that younger and struggling men, or provincial practitioners, can be relied upon to steadfastly observe rules, which, however admirable in themselves, are often observed at some sacrifice? These are, of course, matters too trivial for the attention of the Council, who, engaged on the farcical "*de die in diem* cognizance," cannot look into such trifling details.

It is only when, like a mountain in labour, after more than twelve months of travail, a set of bye-laws is produced, so ill-drafted, contradictory, and generally absurd as to make them a perfect laughing-stock—so drawn, as our Belfast correspondent some time since observed of another of the Institute's efforts, that a National school boy would deserve to be well whipped if he submitted so poor an essay—that we are reminded of the Council's existence.

The Ennis Asylum competition is another case in point. The Institute now wakes up and issues a circular to its members, advising them not to compete. What attention can it be expected will be paid to such an advice? Very little. Why, the Institute itself is directly responsible for the unsatisfactory condition of the rules governing asylum work in Ireland. First, by condoning the procedure of that bungling body, the Board of Control—now, happily, defunct—both in regard to fees, and in respect of the appointment of the architects to the various works. Secondly, instead of making vigorous protest in cases where, through strong personal influence and active canvassing, some county surveyor secured the work, the Council tolerated that practising members of the profession, at the instigation of the Board of Control, or otherwise, lent their names and status to cloak the shortcomings of others. It may be observed, in passing, that, while there is a good deal that is not clear or satisfactory about the Ennis conditions, still, on the other hand, it is the first important asylum work in Ireland that has come under our notice upon which the full 5 per cent. fee has been offered; and, while we may condemn the Committee of Management for not doing better, let us "put the saddle on the right horse."

THE HOUSING OF THE POOR IN LONDON AND NEW YORK.

IS DUBLIN WORSE THAN OTHER GREAT CITIES?

One is often inclined to ask oneself the question—is Dublin really much worse than other great cities in respect of the housing of its poor? For our own part, we are inclined to say: "No—nor as bad as many." In proportion to population, it will generally be found that in walled cities—or cities which once were walled—the evil of over-crowding reaches more serious proportions than in towns of more recent growth, because extra-mural expansion is quite a modern phase. Notwithstanding this, however, there are many notable exceptions—London and New York, for instance. In London the most congested and miserable areas are far beyond the limits of the ancient city.

Some two or three weeks ago a correspondent of the *Irish Times*, in a letter to the editor, sought to prove that the over-crowding of the dwellings of the poor in Dublin had no influence on the high death-rate of our city, and in proof of this contention, made many absurd statements, the chief of which was that London, being a great social and commercial centre, attracted an enormous proportion of the "healthy, the wealthy, and the wise," and those blessed with the fulness of youthful energy and strength, who came in search of pleasure or of fortune, and who, the writer in question said, went home to die if they felt unwell! and thus was produced an artificially low death-rate! Well, doubtless there may be some truth in it, but the writer seemed entirely to ignore that all these classes whom he instances—the wealthy and their immediate dependants—constitute but an infinitely small proportion of London's

millions, the vast majority of whom are of the toiling, hopeless masses, who slave in factory or workshop year in and year out. Has he ever taken an "Underground" to White-chapel, and visited Bethnal Green, or gone in the direction of the East India Docks—or "done" Hackney, and walked as far as Homerton? How many well-to-do Cockneys have ever explored the frightfully dreary and poverty-stricken wilderness of trans-pontine London—the London which lies away beyond Waterloo-road—south, east, or west? And how many Dubliners visiting London ever know of the existence of miles and miles of dreary slums, beginning within a mile of the West End, and stretching away to the north through Marylebone, almost out to Chalk Farm? We venture to say that proportionally there is nothing half so bad in Dublin.

And as to the condition of the tenements in which the labouring classes of New York are herded, or were a few years back, we have in our mind an able article, written jointly some years ago by the late Dr. Aveling, the well-known writer on social questions, and his clever wife, who was the daughter of Karl Marx, the Socialist. The article is an enquiry into the whole question of labour, its conditions and prospects in the United States, and is based upon the evidence given before a Government Commission on the Labour question. Much of the subject-matter is irrelevant to our present observations, because the conditions of labour in the United States have altered much during the past dozen years. At the time to which we refer employment appears to have been generally precarious; the long hours of work and constant heavy strain on faculties of body and mind was well nigh intolerable. Add to this that the labourer of New York city dwelt in rooms often occupied by as many as fourteen persons. Witnesses before the Commission gave an awful and realistic description of the life. "Where they all slept—people of all ages and sexes," said one, "was a marvel—beds there were none." The atmosphere of these dens can be better imagined than described. As another witness remarked, "A whiff of sewer gas was positively refreshing after the heavy, loathsome odour which clung to these dwellings—the floor covered with slime and rotting vegetable matter, which, as Rudyard Kipling elegantly observes, "crawled and stunk." Now, this is a picture of our own time, only a few years back—not the creation of Dr. Aveling's imagination, but the matter-of-fact record of a Government enquiry. Many of the emigrants from England who gave their experiences added that it took months to accustom oneself to the terribly hard conditions of life and the enormously increased amount of work expected from every individual of those classes dealt with by the enquiry, which comprised practically the whole of the artisan and labouring elements of the entire country.

With such a picture before us, and we have little reason to suppose that the conditions of life have materially altered in the last few years, one may well say that there are worse places for the labouring man to live in than Dublin.

THE RECENT EXHIBITION OF THE R.I.B.A. DRAWINGS AT THE INSTITUTE OF ARCHITECTS.

In another column we publish a communication from two Dublin students, who protest against the manner in which this Exhibition has been conducted. It would seem that the class for whose instruction and advantage these displays are chiefly intended was left in ignorance of the very existence of the drawings in question. This, of course, is sufficient explanation of the miserably small number of visitors—something over a dozen. Our correspondents also call attention to the narrow-minded policy adopted of limiting the admission to members of the Irish Institute; and another student who desired to inspect the drawings has informed us that he was challenged for his Institute card of membership. Not being a member of the Institute, he did not possess one. Our present correspondents also blames the Architectural Association for not notifying its members of this Exhibition being held. It will probably be found that the Association, like our correspondents themselves, was in similar ignorance. We, however, received an official notification of the exhibition, though too late to be published before the opening of the display.

THE GREAT BELFAST STRIKE.

It is a matter for congratulation that this strike is, after a duration of a year, now ended, and the men are, back at work. The utility or otherwise of strikes opens up so vast an area of discussion that we do not intend to offer any observations in regard to the propriety or otherwise of this present strike. But the untold misery which strikes in general lead to is such that the advantages to be gained are, as a rule, even in the event of the completest victory on the part of the men, almost neutralized. Work is stopped; men accustomed to their two or three pounds a week are suddenly reduced to the slender "strike pay" meted out by the trades organisation, and between the effort of keeping a roof over their heads and supporting their families the pinch of poverty must be acutely felt. Trade becomes so disorganised that it takes months, perhaps years, to recover its wonted stability—if irreparable injury has not been done—many of the best hands are scattered abroad, and even after the resumption of work there ensues a period of friction and tension which nothing but the most liberal give-and-take policy can mitigate. As a set-off, in certain cases the men may gain a point or two; in some instances they may have the satisfaction of knowing—if it can be a source of satisfaction—that they have made the masters suffer too; but the men are of necessity almost always the heaviest sufferers, and usually return to work with the trade exchequer more or less depleted.

Many of the leading citizens of Belfast tried their hands at settling the carpenters' strike, but without success, until the men approached the Very Rev. John MacMullan, and the employers having accepted his arbitration, the rev. gentleman went into the whole question with a thoroughness and tact so marked that after protracted negotiations, in which Father MacMullan spared neither time nor trouble, he was enabled to bring matters to the happy issue which we chronicle.

One pleasant feature of the arbitration is that Father MacMullan has proved so acceptable a peacemaker, because it augurs a liberality of mind and improved feeling on the part of both masters and men, such as one is not wont to associate with a North of Ireland fight, for the vast majority of those for whom he legislated, and whose Northern obstinacy he overcame, differed from Father MacMullan in creed. Doubtless his close and accurate knowledge of all building matters, and his wide experience in many lands, has largely helped "Father John," as he is popularly known in Belfast, to a decision so generally acceptable to both parties, that he received a regular ovation when he appeared at the men's meeting. Without further comment we say "all's well that ends well."

THE ROYAL HIBERNIAN ACADEMY OF ARTS.

We are sure that it will be a matter of gratification to all our readers to know that there is every prospect that the Treasury will soon review the question of the Government Grant to the Royal Hibernian Academy. At present, this institution, founded by Francis Johnson, an Irish architect, early in the nineteenth century, exists upon the endowment bequeathed by its beneficent founder, and supplemented by a Government Grant, small and fettered by the obligation to maintain a "Life School" for the study of the human subject. The Irish Academy is so poor, compared with the Scottish, that it is scarcely a matter for wonder that Art in Ireland is at so low an ebb, viewed side by side with the vigorous and prosperous Scottish school. The Young Irish Art student has few opportunities of improvement, and the Academy can do but little to aid him. The maintenance of the Life School absorbs almost the whole of the Government grant, and we are not surprised that at one time the Academicians seriously considered the propriety of totally relinquishing the grant in order to attain greater freedom.

For the present more favourable attitude of the Government it is disclosing no secret to say the new president, Sir Thomas Drew, is mainly responsible, thus once again proving himself the right man in the right place. We confidently anticipate that under his tactful guidance the Academy will soon become the school and source of an active and useful representation of Art in Ireland.



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SPECIFICATION.

**The Alexandra Nurses Home, Curragh Camp.
Carpenter and Joiner.**

(Continued.)

Frame and Shutter to Coal-house. The coalhouse, to have a solid frame, as last described, fixed in opening with No. 4 wrought iron hold fasts, weighing 1 lb. each, fixed to frame with two screws to each holdfast, and pinned with the brickwork. 1" deal ledged shutter hung with 14" cross-garnet hinges, and secured with a 4" bright rod barrel bolt.

External Doors.

Porch. To be 2" deal framed in six panels, lead butt on outside, and square flat and moulded on inside, hung with 1½ pair of 4" wrought iron butt hinges, and screwed with an 8" iron rim draw-back lock, with fine round wards, brass knobs, and a 4" night latch with two keys.

The frame to be of fir, 5" x 4½", wrought, framed, rebated, and chamfered, with cast iron shoes ½" metal 3" high with stud at bottom, let into granite sill and run with pure cement, and No. 4 wrought iron holdfasts weighing 1½ lbs. each, fixed two on each side of frames, with No. 2 1½" screws to each, and pinned into brickwork.

The frame to be finished on the inside, with linings, grounds, and moulded architrave, as described for windows.

Backdoor and Yard Door. To be 2" deal framed and braced, filled in with ¾" battens in narrow widths, ploughed and tongued and V jointed, both sides hung with 1½ pairs of 4" wrought-iron butts, and secured with 7" iron rim dead lock, and a strong home made thumb latch, in fir frame 5" x 4½", wrought, framed, rebated, and chamfered, with cast iron shoes and wrought iron holdfasts as before described.

Water Closet Door in Yard. To be 1" deal, ledged and braced, rebated and V jointed both sides, hung with 18" cross garnet hinges, and secured by strong thumb latch, and a 4" bright rod bolt.

Frame to be of fir, 4" x 3", wrought, rebated, and chamfered, and to have cast iron shoes and wrought iron holdfasts as before described.

Internal Doors.

Porch. To be 2" deal sash door, the lower panels framed square flat and moulded both sides, and the upper portion framed as sash, with diminished stiles, for nine squares, the sash bars and framing to be moulded and rebated for glass, which is to be stopped in with putty, hung with 1½ pairs of 3½" wrought iron butts, and secured with a 6" two bolt mortice lock with strong brass furniture.

The frame to be of fir, 4½" x 3", wrought, framed, rebated and beaded, with transom 4½" x 3", and mullions for side lights 4½" x 3½".

The side framing to be 2", the lower panel square and flat, and moulded to match door, and the upper portion with diminished stiles moulded and rebated for glass.

The faulight to be 2" moulded bar in three squares, fixed in rebate of frame, the side framing to be also fixed in rebate of frame.

The frame to be finished with lining, and to have grounds and architraves on both sides as described for deal-cased sash frames, the architraves to have in addition proper chamfered blocks.

Sitting and Waiting Room Doors.

To be 2" deal, framed in four panels, square and flat, and moulded both sides, hung with 1½ pairs of 3½" wrought iron butts, and secured with 6" two-bolt mortice lock and brass furniture as before described.

Bedroom Doors. To be 1½" deal framed in four panels, square and flat, and moulded both sides, hung with 1½ pairs of 3½" inch wrought iron butts, and secured with 6" iron rim two-bolt lock, with strong brass furniture.

Kitchen, Pantry, and Larder Doors, To be as last described, but to be moulded on one side only.

Bathroom and Water-closet Doors.

To be 1½" deal framed in four panels, square and flat both sides, hung with 1½ pairs of 3" wrought iron butts, and secured with 3" brass latch lock, with bolt.

Sashes and Frames.

Fix to windows of sitting and waiting-room a porch, kitchen, and bed-rooms, and landing on first floor, where shown on the drawing and to the size figured thereon, deal cased frames prepared for 2" sashes, double hung, with oak sill 3½" thick, sunk, weathered, and throated, grooved for and with galvanized iron tongue, 1" x 1½", which is to be bedded with sill in white lead. The oak sill is to be also grooved for tongue of window board.

Inside and outside linings to be ¾", grooved to pulley stiles 1½" pulley stiles tongued to linings, 2" heads, ¾" parting slips, 1½" x ¾" inside beads, ¾" back linings, zinc pendulum slips, and 2½" brass face pulleys with gun metal axles, and bushed sides.

The sashes to be 2" deal moulded bar, double hung, with best quality No. 6 plaited flax sash line, and cast-iron weights.

Each pair of sashes to be secured by Emery's patent sash fastener.

The frames in all plastered rooms to be finished with ¾" deal wrought, linings tongued to frame, ¾" wrought, framed, splayed, and staff beaded grounds, 6" wide, 3" moulded architrave, and 1½" wrought and rounded window board, tongued to oak sill, notched to reveals, with returned ends where required, and 1½" x 1" hollow bed mould, tongued to under side.

The frames in kitchen to be finished with ¾" deal chamfered fillet, 3" wide, scribbled to brickwork.

Solid Frames. The frames to windows of pantry, larder, bath, room, lavatory, and water-closet, to be of fir 4½" x 3", wrought framed and chamfered, with rebated head for sashes hung on pivots, oak sunk and weathered sill 3" thick, with galvanized iron tongue as before described.

The sashes to be 2" moulded bar, hung with wrought iron pivots and sockets, and screwed with a 14" wrought iron stay bar, with pin on plate, and a 3" strong brass cabin hook.

The frame and sash to have a ¾" deal cut weather beads.

The frames where walls are plastered to be finished with lining grounds and architrave, as described for cased frame; where walls are not plastered the frames to be finished with chamfered fillets as described for windows in kitchen.

(To be continued.)

OUR ILLUSTRATIONS.**THE STATE CAPITAL, ARKANSAS, U.S.A.**

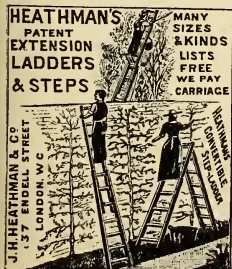
We think our readers will be interested in this design as illustrating the trend of modern American design in regard to public buildings. The general character of current American design as a rule, shows leanings towards French Influence. The architect of the Arkansas Capital was Mr. G. R. Mann. We are indebted to our contemporary, the *American Architect*, for this illustration.

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DUBLIN IN 1775.

BY WILLIAM MACARTHUR.

In the account of an "Irish Tour Through the Green Isle" in the far-off time of 1775, performed by an Englishman, Richard Twiss, we get an interesting picture of the Irish Metropolis. Our visitor records how he chartered a small vessel from Wales, and at a cost of half a dozen guineas made the journey across the Irish Sea, and having arrived, he notes that Stephen's Green is "gravelled and planted with trees on each side, and guarded from the carriage way by a low wall," and adds: "Though the plans and dimensions of this square are celebrated for beauty, the houses are so extremely irregular in style, height, and materials that all style is destroyed; scarcely two correspond in any respect." He dismisses the two cathedrals with the remark that neither is remarkable for its architecture; and as worthy of special attention, records only Richard Strongbow's tomb in Christ Church, adding: "It is spoiled by having lately been painted white;" also the monument of the Earl of Kildare, who died in 1743. As regards St. Patrick's Cathedral he mentions the monument to Dr. Smith, Archbishop of Dublin, and notes a large pile of wooden images, twenty in number, life size, and "painted in proper colours, representing Boyle, Earl of Cork, and family." He says that Dublin of that time possessed eighteen parish churches, destitute of spires and steeples, and that only a few possess modern stone fronts. Trinity College and the old Parliament House gets but scanty notice from our visitor, and he makes mention of the theatres in Crow street and Smock Alley, adding of the latter: "over the curtain is an ingenious device of a ship sailing into port. The vessel is called the Smock Alley frigate; on her sails is written, 'for publi favour, with all's well that ends well.'" *En passant*, the Church of SS. Michael and John now occupies the site of this old Dublin playhouse, where Peg Woffington once drew all Dubliners before going to London. He notes that the amusement-loving citizens of 1775 are catered for in the Rotunda Gardens with concerts thrice a week, and the Ranelagh Gardens (now the Nunnery at Ranelagh Railway Bridge). The reservoir was dry at the time of his visit, and he considers the Royal Exchange, now the City Hall, as "the principal beauty of the city." He visited the Round Tower, which formerly stood in Ship street, at the old Parish Church of St. Michael Le Pole, and adds: "Very few of the inhabitants of Dublin know that this tower exists." Other visits were made to the famous collection of pictures at Lord Charlemont's and Lord Moira's residence, on Usher's Quay, and he gives figures to show that in the Metropolis in 1775 were no less than two thousand ale-houses, three hundred taverns, and twelve hundred hand shops, and the city contained thirteen thousand one hundred and ninety-four houses. At that time single horse chaises plied through the Dublin streets, and were called noddies; also some hackney coaches. As a contrast to the magnificent Dublin suburbs of our day, with the network of handsome residences, laying the nucleus of the great new settlement stretching year by year to the foot of the Dublin Mountains, our visitor gives an unflattering picture of districts outside the city, saying: "The suburbs of Dublin consist chiefly of huts, called cabins, made of mud dried, and chiefly without window or chimney." Two magazines were then published in Dublin, and eight news-sheets, which we are told "are curiosities, both in their style and orthography." The Irish climate is summed up in the report that "it rains four or five days out of the seven," and the compensating note is added that to this is due "the beautiful verdure which everywhere cheers the eye." The custom of franking letters is recorded by our visitor as being a weak point with Dubliners of that time; in strictness, he calls it forging franks, and adds: "As an excuse, some allege that the members of Parliament have given them leave to use their names, while others weakly imagine that there is no penalty annexed to this offence." At that time, he says, "The Irish language is still current among the lower classes of the community, but few of the higher retain its use; but few books are printed in this dialect of the Celtic, and these are only devotional tracts for the instruction of the common

people." Vallancey, who published a grammar long ago of the Ibero-Celtic, is giving also as saying, in reference to the Celtic tongue, that it is free from the anomalies, sterility, and hereoclitic redundancies, which mark the dialect of barbarous nations, and as being precise and copious, and affording those elegant conversations which no other than a thinking and a lettered people can use and require. Vallancey says of this subject, "that the Irish tongue has such an affinity with the Punic, that it may be said to have been in a great degree the language of Hanibal, Hamilcar, and of Asdrubal." This writer, *en passant*, appears to have had some novel views on Celtic matters, an even if they are not shared by Irish authorities, they afford interesting food for conjecture. Vallancey says that Apollo Grian, or Bael, was the principal god of the Pagan Irish, and that from the harp being sacred to him, so we got the ensign armorial of Ireland. On this subject Bishop Nicholson said, "coins were struck here in 1210, with King John's head in a triangle, which it is imagined gave rise to the representation of the harp. It is certain that this impression is not found on any of the ancient coins; but from the time of Henry VIII. it has been regularly continued." To return to our Saxon visitor, he records that a Penny Post had lately been established in Dublin and district, and twenty stage coaches set up all over our island, yet still there were no stage for horses, excepting on the Belfast to Dublin road, and so he hired a carriage and horse by the week for four guineas, and after his stay in the Metropolis, he set out on this conveyance to travers Ireland, travelling twenty-five miles a day. As regards life in Ireland in 1775, he says: "Travelling is perfectly secure, which may be partly owing to its unfrequency, and footpad robberies or highwaymen are seldom heard of, except in the vicinity of Dublin." Again: "The soldiers and butchers of Dublin are said to be always at enmity." Of the many present-day bridges spanning the Liffey the only ones worthy of mention in 1775 appears to have been Essex Bridge and Queen's Bridge, the others being "merely conveyances to cross the river, and defy every order of architecture." And having brought his jottings to an end as regards the Irish Metropolis, our visitor sets out on his journey northward. In connection with the reference above to the old Dublin Parish Church in Ship street of St. Michael Le Pole, it should be mentioned that it and another old Parish Church—St. Stephens', in Stephen street—were formerly united to St. Bride's, in Bride street. Mercer's Hospital now occupies the site of St. Stephens', and its churchyard there is also built over. St. Martin Le Pole's has also passed away out of public memory, and St. Bride's will also soon share the same fate. A leper house formerly existed on the site of St. Stephens', in Stephen street, and St. Stephen's green was probably called after this old place, now only a recollection.

—:O:—

A Coffin Ought to be Plain and Good.—

This is our old friend, Mr. Harry Hems', idea of a simple and artistic coffin:—It should be of plain unpolished oak—English by preference—but Hungarian wainscot, if really good dry English is not available. On plan and elevation, it should be wedge shape, and the lid, without a doubt, steeply coped. If a cross be added on the latter, it must practically run the whole length of the lid. Trefoil foliated ends may terminate the upper three extremities, and it should have triple steps at the foot. It is better to have the cross itself in walnut—not oak—the darker material showing up better, and in more distinct outline; of course the arms should lay back, taking the line of the lid. There should be no shield or breast-plate. The legend, *i.e.*, name, date of birth and death, may be incised in plain, distinct characters upon the right side of the bevelled lid—going from head to foot—care being taken to mark out the letters judiciously, so that the tapering of the slanting lid does not detract from the general harmony of the slightly-eased parallel lines of the actual inscription. By this, I mean its lines, and those of the lid, should all run towards one vanishing point, in this case, the foot of the coffin. The "furniture" may be of massive brass—which always looks well—but to my own individual mind, I prefer that in oak also.

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END OF THE BELFAST STRIKE.

This strike, which has had a duration of twelve months, is now happily ended. The letter of the Very Rev. John MacMullan, C.P., the arbitrator between masters and men, details the terms upon which work is resumed.

The Terms of Settlement.—A large and representative meeting of the carpenters and joiners, who for such a protracted period have been at variance, was held in the Avenue Hall, Garfield street, when the terms of settlement were announced and ratified. Very Rev. John MacMullan, C.P., Rector, Ardoyne, by whose active exertions the settlement was brought about, was present throughout the entire proceedings, and his appearance on the platform was greeted with warm and oft-repeated rounds of applause. In the course of a lengthy speech the reverend gentleman, who from time to time was made the recipient of constantly recurring and hearty marks of approval from all parts of the hall, set forth the terms of agreement. Although the men had not obtained all they sought for, it was his belief that the terms of settlement were honourable alike to both sides. It could not be said that the joiners were beaten, nor had they obtained any great advantage over the other side. No arrangements had been made with regard to the question of "blacklegs."

The proceedings concluded with a vote of thanks to Father MacMullan, which was passed with acclamation.

While leaving something to be desired on both sides, the settlement is regarded as fairly satisfactory to all. Over 1,000 people were affected by the strike, which lasted for the lengthy period of fifty-one weeks. Father MacMullan's efforts were indefatigable in his anxiety to achieve the end which he has at length succeeded in doing, and he has the undying gratitude of the trade of Belfast. The following letter, which we received from the reverend gentleman, sets forth the terms of the settlement:—

TO THE EDITOR OF THE "IRISH BUILDER."

"Holy Cross, Ardoyne.

"Belfast, 17th April, 1901.

"SIR,—To remove any misapprehension, allow me to state that the following is the full text of the award, which has been the means of terminating the recent dispute in the building trade:—

"Men return to work under 1899 Rules, except that Rule 1 shall now read—54 hours per week, 12 o'clock stop on Saturdays, 8½d. per hour."

"Rule 2—Meal hours to be arranged to suit the 12 o'clock Saturday stop."

"Rule 4—Outside the Boundary lines men to be paid extra for a mile, or a part of a mile, 2s. per week; above 1 and not exceeding two miles, 3s. per week; any distance beyond 2 miles, 4s. per week."

"Where these extras are paid, men are to work the usual hours as if employed in Belfast."

"As to wages, no reduction for two years."

"In May, 1902, if trade warrants an advance, it is to be given; but if the employers and employees cannot agree it is to be left to the Board of Trade or other selected arbitrators."

"The above are the contents of the award."

"(Signed),

"John Martin, President Belfast Builders' Association; J. Alfred McAuley, Secretary; Jas. McCrudden, Chairman Carpenters' and Joiners' Society; John Watson, Secretary."

"John MacMullan, Arbitrator."

"These, and these only, are the terms of settlement agreed upon and signed by the representatives of the builders and carpenters and by the arbitrator.—Yours, etc."

"JOHN MACMULLAN."

We regret to note that some friction occurred in connection with the men returning to work on Monday last. The matter of the "blacklegs" was left an open question, no decision being arrived at in regard thereto, but on Monday the carpenters declined to return to begin work until all the "blacklegs" had been dismissed. This the masters declined to agree to, and appeal being made to the headquarters of the trade's organisation in England, a peremptory order was given from headquarters to at once resume work. That this hitch should have occurred is most regrettable.

We hope in our next issue to present our readers with a portrait of the Very Rev. John MacMullan, who so successfully arbitrated between masters and men.

CORRESPONDENCE.

THE COUNTY AND ASSISTANT SURVEYORS AND PRIVATE PRACTICE.

TO THE EDITOR OF THE IRISH BUILDER.

April 17, 1901.

SIR,—I see in to-day's issue of the *Freeman* a Local Government Board inquiry was held at Wexford, where the County and Assistant Surveyors claim increase of salary for additional work put upon them under the new Act. The County Surveyor's salary at present is £650 per annum; one of his points for increase, to use his own words, is: "He has calculated that he had lost £40 a year under the new Act, because his new duties were so great that he could not attend to his private practice!" I am under the impression that it is about time that the architects should stand together, and bring this matter before the Local Government Board, and see if it is to be permitted any longer that these highly-paid officials should devote their time to private practice. In the North, in more than one instance, we have the Assistant Surveyors taking on building schemes under the Housing of Labourers Act, where thousands of pounds are going to be expended, taking the work from those who are depending solely on their practice, they doing it at a much reduced rate; and these over-worked gentlemen can find time to attend to this and any other private business, instead of attending to that for which they are paid.—Yours, &c.,

A NORTHERN ARCHITECT.

[We have over and over again referred to this question. There seems to us to be a lack of cohesion in the profession, or this matter would have been settled long ago. As regards the Assistant County Surveyors there is undoubtedly some excuse, inasmuch as these officials do most of the county work, and are exceedingly badly paid. With the Surveyors it is otherwise. However, we promise our correspondent that we shall keep "hammering away."—Ed.]

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The following letter, addressed to me by the Hon. Sec. R.I.A.I., will doubtless be of interest to the readers of the IRISH BUILDER.—Yours, etc.,

R. M. BUTLER.

Dawson Chambers, Dublin,

April 20th, 1901.

"DEAR SIR,—I am instructed to inform you that, by direction of my Council, I have forwarded your letter of the 20th ultimo, together with the press cutting on the subject of County Surveyors, to the Hon. Secretary of the Institution of Civil Engineers of Ireland, as we consider that they are the body most competent to deal with this matter, as it relates entirely to engineering and not to architecture.—Yours faithfully,

"W. KAYE PARRY, Hon. Secretary.

"R. M. Butler, M.R.I.A.I.,

"Dawson Chambers, Dublin."

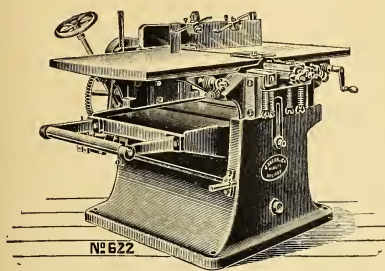
ENGLISH RED TAPE.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—In your current issue it is reported that when a London pressman applied for admittance to the Victoria Railway Station, on the occasion of her late Majesty's funeral, officialism declined, upon the score that no precedents existed from the last Royal funeral in 1837, which justified the admittance of pressmen within Victoria Station. Of course, in the date quoted no such place as the Victoria Station existed. Even at the time of the Russian War, when I happened to be an errand boy, working at a shop upon a part of the site where the great railway station in question now stands, there was not the remotest idea of the iron horse ever invading the locality in question. According to my (rare) copy of Bradshaw's Railway Guide for November, 1839 (*i.e.*, the third issue of the now world-wide known monthly known as "Bradshaw's"), the only railway stations in the metropolis then were at Euston and Paddington.—I am, sir, yours obediently,

HARRY HEMS.

Fair Park, Exeter, 13th April, 1901.



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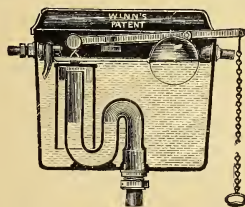
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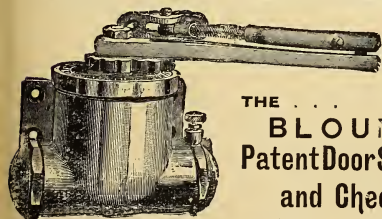


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"THE UGLIEST BUILDING IN DUBLIN."

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—I have just been casually looking over some of the Building journals, and I see in your issue of February 27th "that there appears to be a consensus of opinion that the ugliest building in Dublin is not a hundred miles from Grattan Bridge." I presume that would mean Lever Bros.' offices. Well, as one who admires good work, I thought that some of those figures were well modelled. And I think the stonework at doorway is very artistic, and should reflect credit on those that had to do with it, compared with others that are left unnoticed through the city. The latest are those new shop fronts in Henry street. I consider the ornamental portion of the stonework not alone a disgrace to those responsible, but a disgrace to the city of Dublin.—Yours respectfully,

ONE IN THE BUILDING TRADE.

THE RECENT EXHIBITION OF R.I.B.A. PRIZE DRAWINGS.—STUDENTS' PROTEST.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—We notice in your issue of April 10th a paragraph relating to the above, in which complaint is made of the want of interest taken by Dublin students in this Exhibition. Perhaps you are not aware that some of the students most interested in examining these drawings received no intimation whatever of this Exhibition being held. We find that a card has been sent to the members of the R.I.A.I. by the secretary of that body, from which we quote the following:—"Admission on production of membership card." Surely the R.I.A.I. do not intend to confine the benefit of this Exhibition to their own members? It is not often that Dublin students have an opportunity of viewing drawings of such rare merit as these, and when such occasion arises every facility ought to be given, especially to the younger members, to profit by the examination and study of their design and execution. We also note that the hours of admission mentioned on the card from which we have already quoted are from 10 a.m. to 6 p.m. These hours are hardly suited to the majority of students and assistants. If we mistake not, the Exhibition was formerly kept open to a later hour. We were surprised that we received no intimation of these works being on view from the Junior Architectural Society of Dublin. This, we believe, is contrary to their custom hitherto.—Yours faithfully,

"TWO DUBLIN STUDENTS."

P.S.—We enclose our names, but not for publication.

THE HOUSING OF THE POOR.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—Anent the housing of the working classes, might one make a few comments from a popular standpoint. Manifestly there are two ways of treating this evil of overcrowding—clearing present congested areas or building new dwellings on the outskirts of the cities. Whichever course be adopted, things should be looked at in a businesslike way and a profitable plan selected. As was fully explained recently in the public Press, by the time existing tenement sites are acquired by arbitration there cannot be sufficient money remaining to the local authority to build properly-equipped dwellings on a profitable basis. City tenement house properties frequently bring long prices owing to the large profits they yield in their present overcrowded state, but when proper accommodation is allowed, no profit can be shown after the payment of high rates, ground rents, etc. Municipal authorities should buy new sites in outlying districts, where the children could be reared in fresh air and in moral surroundings. Assuming a family to consist of father, mother, and two young children, only one, as a rule, of this family is obliged to be at a particular place of business, possibly within

the city, for any great time daily; while the other three may be anywhere within a reasonable distance of this place. The mother and the children (the new population) should live as near the country as possible. In other words, follow the example of our leading carrying companies, whose directors have for years past provided healthy dwellings for the wives and the children of their employees at their country stations. This plan would not be any new inconvenience to the workers, many of whom at present are obliged, owing to want of accommodation, to come into the city, where they sleep, from the country or suburbs where they work. The aim of every Municipal Council should be to buy land in its adjoining rural districts, even at an enhanced price, rather than to spend fabulous sums in purchasing fictitious rents by arbitration and in rebuilding existing tenements. There is a case before me where £12,000 per acre was paid to effect the clearance of a site in a backward part of a city. Allowing some large areas should be cleared, no architect could, with the money at his disposal, and with a due regard to the several restrictive clauses in the Building Act, give sufficient accommodation in many cases for the present tenement population. Provision must, therefore, be made for the surplus population that it may not migrate to another quarter and produce anew the usual bad results of overcrowding. Further, the best-planned dwelling that any architect could design would not, and should not, give as good hygienic results if built in the city as if built in the country. Besides, it is much cheaper to build good dwellings on a suitable level site in the country (on a soil not contaminated with sewage and disease) than on some of the exceptionally difficult and irregular sites frequently found for this purpose in cities. Given satisfactory conditions—which any architect can specify—this class of property can be made to pay a handsome dividend, after ample provision has been made for maintenance, etc. The employment of the more modern steel construction (which is coming rapidly into general use) admits of larger, stronger, healthier, and cheaper dwellings than the brick, concrete, or breeze dwellings now in use. Any municipal authority running its own electric trams should be able to make overcrowding an impossibility. A quick and cheap system of transit right through a city, and somewhat beyond it at either end, is the best available method of distributing the population and of preventing congestion; but no buses, trams, or trains should be allowed a certain terminus. It is an axiom with us that "trade follows the flag." It is almost equally true that "trade follows trams or trains," viz., if a tram or train be run into a new district, the district so served will readily be built upon and become populous. A municipal authority owning the public water supply, the public electric light, and the public electric trams should be able to supply artisans' and labourers' dwellings much better and much cheaper than any private company. And if these dwellings can be built and run at a profit by private enterprise, the municipal authority should be able, with its special profits, to supply well equipped libraries, baths, wash-houses, technical schools, etc. It is the business of the municipal authority rather than of private individuals to see to the welfare and to the comfort of the artisan and the labourer. If they be properly attended to the necessity for huge sanitary departments and huge hospitals will be materially reduced. Again, the moral and the hygienic condition of the workers would be greatly improved by residence in the country or outlying districts. It is admitted by medical and veterinary practitioners that pure fresh air is one of the best agents in promoting health and condition. Some specialists even state that cold rarefied air, such as one gets in mountainous and elevated districts, is a cure, or at least a correction, for pulmonary consumption—the commonest and most deadly disease amongst us. In one city lately of 134 deaths 48 were certified from tuberculosis and 57 from respiratory diseases, or 105 out of 134 deaths from diseases connected with the lungs. A primary and the potent cause of pulmonary consumption is impure and exhausted air. Can one urge too emphatically, therefore, the employment of the Toban system of introducing fresh air into a room? Another, cheaper, simpler, and almost better arrangement is to place

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a thin board, about five inches wide, across and under the lower part of an ordinary window when raised that amount. The latter simple and ready method neither creates a draught nor interferes with the window blind, whilst it supplies the room with an ample allowance of fresh air. It is a method of ventilation suited even to the bedroom—a most essential place to have properly ventilated.

Trusting I have not trespassed at too great length, I remain, yours faithfully,

BLAKE O'CONNOR.

Dublin, April 20th, 1901.

Note.—Development on the lines suggested by our correspondent has made Glasgow the first Municipality of the world.—ED.

—:o:—

BOOKS RECEIVED.

SPONS' ARCHITECTS' AND BUILDERS' PRICE BOOK, 1901. By W. Young, Architect. Edited by Clyde Young, A.R.I.B.A., London. E. & F. N. Spon, Limited. 125 Strand.

The volume for 1901 constitutes the twenty-eighth edition of this standard book on prices, and this, in itself, constitutes testimony to the value of the work.

The general character and arrangement of the work shows little change, the same general classification being retained as in former editions, but considerable additions have been made to the sum of the information given. A certain amount of details of a somewhat absolute character are retained, and these might well have made way for more modern and practical information, though we do find in this edition a chapter on electric lighting and the prices connected therewith. There are also fresh details and prices relating to concrete, fire-proof floors, &c., all of which must prove most useful to the architect and the builder.

A DIGEST OF BUILDING CASES, WITH NOTES AND AN APPENDIX. By E. S. Roscoe, B. L. London: William Clowes and Sons, Limited, 27 Fleet street. 1900.

The title alone of this book is sufficient to excite interest, and, after a perusal of it, we can safely say no more useful book could be given space on an architect's bookshelf. The present is the fourth edition, and the author takes to himself some credit for that he, while enlarging the scope of the work, has not added to the size of the volume, which is of the handy text-book character. An admirable selection of important and representative decisions on most of the questions relating to a builder's contract is given; the points affecting each particular case being clearly and ably set forth in such a manner as to render the compilation intelligible to any ordinary layman.

We were somewhat disappointed, however, at not finding any cases bearing on sanitary complaints by local authorities, the rights of such authorities under the Public Health Act, in relation to new buildings, etc.; for no more fruitful source of litigation exists. Of the 187 pages which make up the book only about 70 are devoted to "digests" proper, the rest being applied to "forms of pleading," agreements, loans, and conditions of contract, &c. Now, in our judgment, a great deal of these could, with advantage, have been condensed, while the Institute Schedule of Charges and Form of Contract could have been omitted in order to allow of a more liberal assortment of digests. However, this is a matter of opinion, and, taking it as a whole, the book is a very admirable one which cannot fail to be of the utmost utility.

OLD COTTAGES AND FARM-HOUSES IN KENT AND SUSSEX. Photographed by W. Galsworthy Davie, with descriptive notes and sketches by E. Guy Dawber, Architect. London: B. T. Batsford, 94 High Holborn. Price, 21s., nett.

The authors of this work give us a delightful glimpse of rural England. Who is there that has spent a pleasant holi-

day in an English village—untouched by the restorer's hand or the operations of the loathsome "model bye-laws"—but will turn with delight to such a record?

The study of such examples is of the greatest possible value—it helps to correct the baneful tendencies of the modern designer—full of "fussiness" on the one hand, or, on the other, that affected cult of ultra-crudeness. Such cottages as these are frightful violations of the law; but they are comfortable, durable, and never will lose their charm for the architect, whose delight it is to sketch and to turn each scant holiday to account. The illustrations are splendidly produced by the collotype process. Why do not some of our young Irish architects turn for inspiration in the design of country cottages to that characteristic feature of Ireland—the thatched cottage? Why do they lend themselves to the total obliteration of so charming and sensible a treatment?

THE PROSPECTS OFFERED BY EMIGRATION.

This is the best season of the year for emigration to Canada. There is a fair demand for general labourers, and for certain mechanics, such as carpenters, blacksmiths, and iron and steel workers.

In New South Wales, at Lithgow, there is a demand for carpenters and painters, and coal miners. There is a demand in parts of the Colony for men in the building trades, especially plumbers. At Sydney, men out of work are being provided with employment on Government works at 7s. a day; it is stated that this wage is attracting men from the country districts, so that in several districts it has been impossible to obtain good farm hands.

In Victoria there is practically no demand for more mechanics or labourers.

In South Australia and Tasmania the local supply of labour is mostly sufficient.

Owing to drought and scarcity of employment in Queensland, emigrants are not recommended to go there at present.

The Report of the Government Labour Bureau in Western Australia for 1900 states that, generally speaking, there has been full employment for all classes of workmen throughout the year. Building operations have been brisk, and carpenters, masons, plasterers, etc., have been in demand at Fremantle. Tailors and timber-workers have also been wanted in parts. Unskilled labour was better employed than in the year before, and the first-class labourer found no difficulty in obtaining regular employment at good wages.

The last reports show that there was plenty of work in New Zealand. In Auckland there is good employment for bricklayers, carpenters, and general labourers, a fair demand for plasterers, painters, and engineers.

In Taranaki there is a great demand for competent general labourers for road-work, etc., and the sawmills and building trades are very busy. In nearly all other parts also of New Zealand, except at Christchurch, the building trades have been very busy, and at Dunedin carpenters have been wanted. In the engineering trades all hands seem fully employed, but there is no special demand for extra men.

Persons are again warned against going to South Africa at present in search of professional or manual work, unless they have ample private means to meet the very high cost of living. They will not as a rule be allowed to proceed up country.

The Wexford County Council have voted £300 for painting New Ross Bridge.

Enniscorthy R.D.C. contemplate a large number of minor works in the town and district.

THE IRISH BUILDER.

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, * SANITATION,

ARTS AND HANDICRAFTS.

Every Second Wednesday.

[Established Jan. 1859.]

No. 992—Vol. XLIII.

HEAD OFFICE

MAY 8, 1901.

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TOPICAL TOUCHES.

Some of the worst kept macadam roads in the whole of Ireland are to be found within the city of Dublin.

Give a Dublin marble mason a good design to work from, and you can get as good work as is anywhere produced—foliage, figure carving, or architectural detail.

The preamble of the Dublin Municipal Equalisation of Rates Bill has been passed by the Committee of the House of Commons. Henceforth the outlying townships will have to contribute towards many expenses, which at present fall on the city's broad shoulders.

The Royal Exchange Assurance Corporation, the owners of the beautiful Foxrock estate, near Dublin, are now ready to advance on easy terms, two-thirds of the cost of building houses on the estate.

Messrs. Maguire and Gatchell, of Dawson-street, Dublin, are now the agents for the "Well" fire. No better or more economical grate exists, while it lends itself to decorative treatment, and will burn for as long as twenty hours without attention.

We hear that the Architect's fees in the case of a certain big asylum work shortly to be begun are only 3 per cent. The Institute of Architects has made no protest, yet it protests against the Ennis Asylum, in the case of which the fees will be 5 per cent.

The Dublin suburban townships brag of their comparatively low rates, but they are low because many of the local bodies have neglected their obligations to properly maintain the districts within their charge, whereas the Corporation have often plunged headlong into extravagant outlay, the effects of which handicap the city in dealing with pressing matters. Bray spent nearly £50,000 on enclosing a mudbank, and then had the cheek to call it a "harbour." A harbour of refuse it is—not refuge. The "sinking fund" on this "wild cat" scheme is sinking the township.

We hear of several cases in which Architects are joining in partnership with persons not recognised as regular members of the profession in connection with big asylum works, in order to avail themselves of the latter individuals' local influence with the road contractors and other members of Asylum Committees, and to keep out a brother professional who goes to win on his own merits. To our mind such tactics are much more reprehensible than undercutting in fees, and nearly as immoral as accepting illicit commissions from contractors and manufacturers.

£40,000 was spent on law costs in connection with the Dublin Municipal Boundary Bills.

The £7,000 required for the Dublin Memorial to the Queen has been almost raised. The memorial will take the form of a statue.

A Belfast friend remarked to us the other day how dusty and ill-kept the streets of Dublin were. We are afraid there is truth in it. Scavenging in Dublin is far from what it ought to be. Belfast streets are unquestionably much cleaner.

Our excellent contemporary, the *Builders' Journal*, has lately raised its price to 2d., but its value is also raised, for the new series is better than the old—full of useful articles and interesting illustrations. We wish the *Builders' Journal* every success.

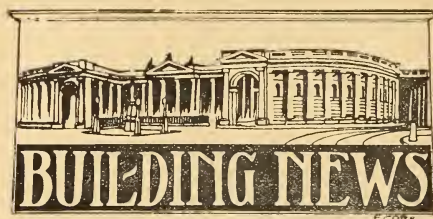
A great outcry is being raised against the governors of the Richmond Asylum on the ground of extravagant outlay. £300,000 won't see the Portrane auxiliary finished, while £7,000 was spent on the doctor's residence at the Richmond.

We are sorry to note the death of Mr. John Busby, of Pembroke Vale, Bray. It was mainly on the deceased gentleman's initiative that the directors of Guinness's Brewery made the interesting experiment of a technical and general educational scheme for the lads in their employment.

Messrs. James Duthie and Co., so well known in connection with their famous "Duresco," send us a show-card of their "permanent reds." These reds are in a couple of shades of that deep, rich red so much desired by architects and decorators.

In the current issue of the *Weekly Budget* is commenced a series of articles on emigration. The Board of Trade statistics show that the number of emigrants from the British Isles is increasing every year, and the *Budget* articles have been designed with the object of conveying to intending emigrants practical hints and information regarding the various colonies and foreign countries inviting settlers. They will, no doubt, be read with deep interest.

An examination has been announced, and will start on 13th June, for the position of Valuer and Surveyor in the Valuation Office, Dublin. The salary rises from £120 to £300 for the Second Section, and £315 to £450 for the First Section. Travelling expenses and subsistence allowance of 10s. per day are allowed during six months of the year, when employed in the country. Two vacancies are stated, but there will probably be three places filled up. Technical qualifications are necessary. Full particulars and forms can be obtained from the Secretary, Civil Service Commission, London, S.W. We gave specimen papers in a former issue, when the last examination was held over a year ago.



Armagh.—Arrangements for the erection of a memorial to Hugh Carbery, of Armagh, who died at Modderspruit fighting in the ranks of the Transvaal Irish Brigade, are being pushed forward. A meeting was held on Sunday, at which it was decided that the memorial should take the form of a Celtic cross of Ballinasloe limestone, the base to be of Armagh limestone. It was announced that since the previous meeting of the committee a second instalment of 100 dollars had been received from Mr. Edward M'Shane, treasurer of the New York Memorial Committee.

FOREIGN ALTARS.—We regret to hear that a number of Carrara marble altars which are required for Armagh Cathedral are to be made in Italy. Beyond question such work can be done in a more substantial and artistic manner in the United Kingdom. No person need go beyond Dublin in fact, for the city of Dublin has some sculptors' shops which turn out work second to none. At another Northern Cathedral one of these imported altars was so indifferent in execution that it had to be replaced by Dublin made work. The truth is, modern Italian carvers have about as much idea of Gothic detail and foliage as they have of Sanserit literature.

Cork.—At a meeting of the Cork Technical Instruction Committee on Monday applications for the appointment of head science master and organising secretary for Crawford Municipal Technical Institute, at a salary of £300 a year, were considered. The Right Hon. the Lord Mayor presided, and there was a large attendance of members. Forty-seven applications were received, of which 37 were from England and Wales, two from Scotland, three from Dublin, and five from Cork. It was previously agreed to send up six names to the Department of Agriculture and Technical Instruction for inquiry and report as to their fitness, the Department to send back three, from which the Committee would select one, to be finally approved by the Dublin authorities. After consideration the following names were selected:—George E. Armstrong, M.Sc., Brighton; Arnold Philip, B.Sc, London; E. A. O'Keeffe, B.E., Blackrock, Cork; J. R. Cotter, M.A., Dublin; J. Porter, B.E., Bandon; and James Comerton, B.A., Cork.

Clonmel.—On Thursday next the Joint Committee of Management of the District Lunatic Asylum will consider the contemplated large additions to the asylum, and will probably proceed to the appointment of architect in connection therewith.

Castleblayney.—The principal business was consideration of tenders for labourers' cottages.

Mr. Jas. Duffy said they should make an order that unless a contractor takes all the contracts allotted to him by the board he should get none. In the past men tendered for a number of houses, and when they went to sign the bonds they declined to take any except what suited them.

The Council unanimously agreed with this suggestion. The lowest tender was accepted in each case. For some of the houses there were no tenders. In other cases tenders were sent in which were held to be informal, and the Council in these cases decided to re-advertise for fresh tenders.

Henry M'Adam tendered at £113 and fencing extra; John Callan, £120 for all. The clerk said the former tender was informal. Chairman: How are we to know what the fencing will cost?

Slane (Francis Lennon's land)—Terence M'Ginty, £115; John Conlon, £120; Henry M'Adam, £109, and fencing extra. Mr. Jas. Duffy contended that they should not accept any tender for this house, following the precedent in the last case. The Council, however, accepted M'Ginty's tender.

Tossy (John M'Bride's land)—Michael Henry, Silverbridge, £135 15s.; John Callan, £125 (accepted); John M'Mahon, £130. John Wiley also tendered at £125, but not on the proper form.

Corryloan (James Duffy's land)—R. Watson, £111 15s., and fencing; H. M'Adam, £108, and fencing. Both tenders rejected as informal.

Dernaglug (James Keenan's land)—James M'Entee, £110 (accepted).

Annyalla (on E. M'Arde's land)—R. Watson, £115, and fencing; H. M'Adam, £112, and fencing; J. Callan, £123; M. Heany, £131. No tender accepted.

Corratanty (Dr. Hunter's land)—J. Callan, £122 (accepted); R. Watson, £122 10s., and fencing.

Drumakill (on Jas. Bailey's land)—John Callan, £122 10s.; P. Fox, £105 10s. (accepted); R. Watson, £111 15s.

Castleknock. The contract for the work of alteration and addition has been let to Mr. James Kiernan, of Dublin. Mr. W. G. Doolin, M.A., is the architect.

Dublin.—A new aisle has been added to the fine church of the Dominicans in Dominick-street, Dublin. The church is of that type of Gothic in vogue in the "sixties," and is one of the beautiful works of the late J. J. MacCarthy (father of our city architect). He was a friend and follower of A. W. Pugin, and there was always a dignity and reserve about his work which has a refreshing effect. The new addition was designed by Mr. G. C. Ashlin, Architect, and carried out by Mr. James Donovan, both of Dublin.

PUBLIC HEALTH COMMITTEE.—The committee had under consideration several reports and plans with reference to buildings proposed to be erected in the city. Reports were submitted with reference to the working of the Disinfecting Depot. The question of the drainage of houses at Greenville-avenue and Fearon's-court were under the consideration of the committee. Reports were submitted by the committee's veterinary inspector with reference to the dairy yards and slaughter-houses in the city, and a report giving particulars of his inspection in the cattle and springer markets, dealing with the practice of the over-stocking of milch cows.

THE IMPROVEMENTS COMMITTEE AND MR. PURCELL'S SEWAGE SCHEME.—The question of the proposed widening of that portion of Nicholas-street adjoining Christ Church-place, having been under the consideration of the committee, together with a report thereon by the Borough Surveyor, pointing out what work will be required to be undertaken if the widening is to be accomplished, the secretary was instructed to obtain further information on certain features of the proposed scheme before proceeding further with the matter. The secretary submitted the reply of Mr. Perrott relative to the particulars of the loan obtained by the late Clontarf Commissioners for the building of the workmen's dwellings in Murray's-lane. This loan provided for the erection of ten dwellings, which have been completed, and are being got ready for occupation by the tenants requiring them in the township. The attention of the committee having been directed to a paper read at a recent meeting of the Institute of Civil Engineers (Ireland) on the "Utilisation of Sewage," by Mr. Marmaduke Purcell, C.E., the matter was referred to the Borough Surveyor for report. The question of the making of a new roadway along the Grand Canal bank between Forbe's-lane and Harcourt-street Bridge, having been under consideration, the Borough Surveyor and Sir Charles Cameron were requested to report thereon—the former with regard to the cost of the making of the roadway with a bed of concrete and the carrying out of the levelling necessary, and the latter with regard to the suitability of building on same. Several other matters having been considered and disposed of, the committee adjourned.

LABOURERS' COTTAGES SITES.—The Local Government Board forwarded the North Dublin R.D.C. a letter from Mr. James Dillon, who had been the arbitrator on the matter of sites for labourers' cottages at Howth, Raheny,

and Blanchardstown. The letter, which was in reply to a communication from the solicitor to the Council, stated that the Howth site was in the lawn, a few minutes' walk from the harbour end of the railway and was 100 feet by 73 feet. It was proposed to put 20 cottages on it. Lord Howth's agent had deposed that owing to the increase in the value of building sites in Howth, the ground was worth 2s. 6d. a foot, and he (Mr. Dillon) awarded £203 for the site. The Raheny site was in the village, and the award to Lord Howth as owner in fee was £50. The Blanchardstown site in the village was five acres in extent, and was good grazing land. Treating it as such he valued it at £797; as accommodation land he valued it at £817; and on the evidence he awarded £55 to Lord Iveagh for his interest, and to a tenant £50 for hers.

Mr. McGough moved a resolution to the effect that the Council considered the explanation from the arbitrator very unsatisfactory, and they considered he had evidently misunderstood the valuation of the Howth site, where he stated the Council were building 20 cottages, where, as a matter of fact, they were only building eight on the plot in question. The Council also wished to point out that the late Mr. Murphy, arbitrator, awarded only £130 for a much superior site in Howth five years ago, with 30 feet additional frontage. The resolution further stated—"The same arbitrator also valued land in Blanchardstown within a few hundred yards of Lord Iveagh's site, for the building of labourers' cottages some five years ago at nearly half the sum which Mr. Dillon now values the plot at."

Mr. McLoughlin seconded the resolution which was adopted.

Killiney.—At a meeting of the Urban Council the Clerk said he had received a copy of the opinion of Mr. Clancy on the Rathdown Workhouse drainage. He thought it was in their favour. Councillor Masterson remarked that The MacDermott's opinion was indefinite. The matter was postponed.

Limavady.—At a meeting of the Rural Council. The balance against the Council was reported to be £28 os. 7d. Mr. J. W. Wilson, surveyor, wrote, enclosing specifications for the Ballykelly and Glasrey water supplies. The cost of the Ballykelly scheme would not exceed £30, and the Glasrey £15. A committee reported regarding sites in the Lislone division on which to erect labourers' cottages. The consideration of the matter was deferred until next meeting, in order to ascertain the price of the different sites. A committee also reported regarding a site for cottages on land of which Mr. Mark is tenant, and Lord Macnaughten, land lord, on which to build cottages. The matter was also deferred in order to ascertain the price.

Maryborough.—Mr. J. P. Wrenn, Dublin, has been appointed architect.

New Ross.—The following appears in a contemporary:—"Ramsgrange, Arthurstown, April 24th, 1901. To the Guardians of New Ross Union.—Gentlemen: I have just heard that you are about to build a courthouse and dispensary at the village of Ramsgrange, and that you have in contemplation to build them on a portion of the Monastery lawn, or on a part of a field which is occupied by a farmer named William Power, and which is right opposite the principal entrance to St. Catherine's Convent, and in close proximity to that Convent National School, attended by the female children of the Ramsgrange district. Taking into account the disorderly and often infamous characters which are prosecuted in such courts, need I ask is it fitting to assemble them at a convent gate and at the door of a convent schoolroom? I, as parish priest of this parish, emphatically—vehemently—protest against such a nuisance in such a place, and I must say I am amazed that a body of sensible men could entertain the idea for one moment. As to the monastery lawn, it is Church property, and one inch of it cannot be intruded on by any building without disfiguring and marring the effect of the fine Monastery built on that lawn. Our venerated Bishop, the Most Rev. Dr. Browne, now in Rome, is the principal guardian of the Church property of this diocese. I am the senior and principal lessee of the monastic property, and I hereby protest with all the

energy and earnestness of my soul against any interference by anyone with that property. In fact, laying aside the impropriety of collecting the drunkards, ruffians, and bad characters of the Arthurstown sessions district at a convent gate, and at the door of a convent schoolhouse, and at the door of the monastery, and of their school, there is no accommodation in this village for those who must attend the courthouse or the dispensary. There is in Ramsgrange a well-kept public-house, but attached to it there is not stabling, except, perhaps, for an ass. Where are the magistrates, the solicitors, and all the rest to put their horses? Where are the delicate, the sick, the mothers and their babies to find accommodation? That question is to be solved by the wisdom of the New Ross Board. I have but to again repeat my emphatic—indignant—protest against the nuisance at the convent gate and schoolhouse, and at any interference with the monastic property.—Gentlemen, yours faithfully, THOS. CANON DOYLE, P.P."

Newry.—THE RE-BUILDING OF THE HOUSE.—The Clerk said that the Board was specially convened to consider the report of the new (third) committee relative to the re-building of that portion of the workhouse which had been destroyed by fire.

Mr. Strain, chairman of the committee, said that they ascertained from Mr. Brown, the architect, how he would treat the board in regard to the preparation of the first plans, and what would be his charge for making out new plans and carrying out the work. Mr. Brown said that he would take the half, or a little less than the half of the ordinary fees—£315—for the work already done by him. The committee, with two exceptions, thought that that was very fair, and they came to the conclusion that they would recommend it to the Board. Mr. Brown agreed to undertake the making out of new plans in such a manner as would please the guardians and the Local Government Board, and also to superintend the carrying out of the work, for five per cent. on £4,500. The committee thought that that was satisfactory, and they agreed to also recommend it to the board. He begged to move the adoption of the report.

Mr. P. O'Hare—When he was asked could he make out new plans for the erection of a building for £5,000, he said he could do no such thing unless he built a wreck, the same as the house was before the fire. I think it would be wise for the board to get new plans from two architects and choose whichever is the best.

Mr. McGuill, a member of the new committee, said that he was not at all pleased with the proposal to pay Mr. Brown £150 for the old plans. Mr. Brown was told to his face by a member of the first committee that he got instructions to draw out plans not to exceed an expenditure of £5,000, but he did not acknowledge whether he did or not. If Mr. Brown had prepared plans for £40,000 would the board be supposed to pay him 3½ per cent. on them? The charge of £150 represented 3½ per cent, or within a few pounds of it, on £4,500. Anybody would do the new work for 5 per cent. The man from Drogheda was told that if he had not a return ticket he might walk home.

Mr. Finnegan—Mr. Brown is a Newry man; that is at the bottom of the whole thing.

Mr. Molloughney said that if any guardians wished to test the matter at their own expense he would be very glad. Although the contract for the building of the new Town Hall in Newry was £7,312, the amount paid as architect's fees was £813 6s. 7d.

Mr. Magee said that at a meeting of the Proposals Committee of the Down County Council the other day a movement was made about the amalgamation of workhouses. He did not think he was trespassing on the bounds of etiquette in saying that the recommendation of that committee would be that a certain workhouse would be abolished, and used as an auxiliary asylum. If the Newry Workhouse was fixed upon and abolished it would be a serious consideration for the whole union.

Mr. Strain's motion was unanimously adopted in the following terms:—"That Mr. Brown be paid £150 for his first

set of plans, and 5 per cent. on £4,500 for his second set of plans and specifications, taking out of quantities, superintendence of the work, and all other services required of him in connection with the re-building and restoration of the workhouse—the plans to be prepared in such a manner as will meet with the approval of the Board of Guardians and L. G. B.; no payment to be made unless plans are so sanctioned; the plans to be prepared within two and a-half months; the cost of the work not to exceed £4,500, and no extra fees or expenditure to be incurred."

Navan—A letter was read from the Local Government Board relative to the proposal of the Guardians to obtain a loan to carry out certain improvements in the workhouse. The Local Government Board requested that the consent of a majority of the Guardians should be obtained to the proposed expenditure, and that the form of application should then be signed by the Chairman and forwarded to them.

The Clerk stated that the consent of a majority had been obtained.

The Chairman signed the form of application, and it will be forwarded to the Local Government Board.

The amount of loan is £813 9s. od., repayable in 35 years at 3½ per cent.

Omagh.—The weekly meeting of the Board of Guardians was held. The Master submitted a statement showing the amount of money expended in repairs on the workhouse for the past year, the amount being £51 7s. The Clerk said that formerly the work was done by contract, but it was done in such an unsatisfactory manner that the Board decided that for a year it should be done under the master's supervision. The Chairman thought they should revert to the old system of doing the work by contract. On the suggestion of Mr. T. O'Kane, the further consideration of the matter was adjourned for a week. A letter was received from Mr. J. L. Donnelly, C.E., stating that he could not make any change in his estimate for the proposed alterations to the nurses' rooms. Mr. McAleer thought that £105 was a big sum to spend on such a work. The matter was adjourned for a week.

Rathdown.—THE CHAPEL AND NUNS' RESIDENCE.—The Local Government Board wrote stating that they had authorised the issue of the loan of £4,500 from the Board of Works for the purpose of erecting a Roman Catholic Chapel and Nuns' residence. The loan would be repayable in four instalments of £2,000, £1,000, £1,000, and £500; and it would be spread over a period of 40 years. It would be necessary for the guardians to make application for the loan to the Board of Works.

The Clerk said he had written to the Board of Works, and had obtained the required form of application.

Mr. Kennedy said they now at last could see the result of their labour in this important matter. They had now only to make application to the Board of Works for the loan, and to issue advertisements for a contractor to carry out the works. He thought they should extend the advertisements over three weeks, so that they could get a good contractor, and have competition as to the price. They should bind the contractor to have the work finished within six months. The work could be well done in that time. He proposed that application be made for the loan, and that advertisements be issued for a contractor.

Mr. Clarke said he did not think a contractor could do the work in six months. By binding them to that time they would prevent many builders from tendering. He thought that eight months should be given.

PROPOSED CONSUMPTION HOSPITAL—At a meeting of the Board of Guardians the following report was read on the above subject:—"Lady Gilbert and Mr. Clarke visited the hospital for consumptive patients at Newcastle, Co. Wicklow, for the purpose of seeing the construction of the building and obtaining information as to the system of treatment of diseases of the lungs practised there. The wards and rooms all lie to the sun. In the sleeping rooms the windows reach to the floor and open like doors, standing open night and day; the doors of the

corridors also stand open. The bed is placed just out of the current of air, which blows continually through the apartment. The door windows open on a balcony running along the whole storey. The day rooms—one for the men and one for the women—are built exactly like a large conservatory, the sun showing through the high glass dome and glass walls, while currents of air pass from the open door and windows. Here are books, games, a piano, and many of the girls are busy at fine needlework. There are no fires in the rooms, winter or summer. If a patient feels cold, he or she may lie down on one of the hammock couches which hang about the room, and have a hot jar applied to the feet. All are encouraged to take exercise in proportion to their strength. None are allowed to walk more than two miles a day. In summer they are out all day, lying on the grass in the sun. Diet—At five o'clock in the morning they get milk; at breakfast, porridge and milk, tea, bacon and eggs, bread and butter, as much as they can eat. Each patient has a pound of cooked meat a day, as much vegetables as they can eat, and each takes three quarts of milk a day. No stimulants are prescribed. Precautions against infection—No handkerchiefs are used except paper ones, which are burnt. Each patient has a bottle in pocket for expectoration, and these bottles are washed and cleaned with carbolic fluid, the contents having been burned. The washing for patients (disinfectants being used) is done on different days from those devoted to the washing of the clothing of the staff. The patients complain of the cold at first, but soon get accustomed to the treatment. They are allowed a great deal of clothing, and they consume a large quantity of nourishing food. They are weighed once a week. The walls and roofs of the sleeping rooms are as in ordinary houses, but the day sitting rooms are all of glass for concentration of light and heat. In a ward where there are four beds with open doors on each side, open to the night air to the ground, light screens stand beside the bed. A new ward to be built is to have walls of wood with a tiled roof. At first each patient had a separate room, but in future it is intended to have more than one in each room, a certain number of cubic feet being allotted to each bed.—Rosa Gilbert, T. Clarke." Mr. Clarke said the report submitted by Lady Gilbert was very instructive. He thought it would be advisable to appoint a committee to consider the question, which was one of the greatest importance. Whether the Local Government Board insisted on it or not it should be their duty to provide an hospital for the poor people who were consumptive, and give them a chance of living. The doctor said there were ten cases at present, but even if there were only one it would be their duty to provide for it. He proposed that a committee be appointed to consider the matter. The Newcastle Hospital was designed by Sir Thos. Deane and Sons, architects.

IMPORTANT TO TIMBER MERCHANTS AND BUILDERS.

Messrs. Richard Martin & Co.,

WILL HOLD THEIR ANNUAL SALE OF

WOOD GOODS

ON TUESDAY, 21st, MAY 1901.

AT

29 SIR JOHN ROGERSON'S QUAY.

Catalogues will shortly be ready.



Armagh.—MORE WRANGLING ABOUT THE DRAINAGE.

The Council spent much time discussing a bill for £240 for extras from the contractor. Mr. Peddie said they were correct. As to one item, £7 7s., half the price of one of Mr. Lavery's charges, it was correct, as it was in the bill of quantities and he was obliged to allow it. If the lawyer had also charged it to the Board it was a matter for themselves. He only certified what he was bound to certify. With regard to one item of £25 for work executed in Cassidy's field, he admitted that if there was any fault as to this it was his own. Mr. O'Neill, on the face of this admission, contended that the engineer should pay this £25. Mr. Peddie rather feebly argued that if he had to do this he should on the other hand get credit for any saving he had made. Mr. O'Neill (grimly)—When we come to such a thing we can discuss it. I move that the engineer pay this sum. Mr. W. Donnelly moved that the matter be left to the consulting engineer, and it seemed as if this course was adopted. A report of a committee was read recommending that nine acres should now be taken for the disposal works, &c., instead of five. Some of the Council asked an explanation of such a proposal. Why was it necessary? Mr. Peddie stated that he had always recommended the acquiring of the entire field, as it would have saved the making of a roadway and an accommodation road. Messrs O'Neill and Cassidy heckled Mr. Peddie very severely as to when he ever informed the Council that the whole field and not five acres should be purchased, and Mr. Peddie had to admit that he never informed this Council, but he held that inasmuch as he had in all his maps marked the areas of the different portions of ground it was for the Council to take as much as they chose. Mr. Cassidy strongly resented such an imputation. Mr. Peddie had distinctly failed in his duty. Mr. Peddie said he distinctly contradicted this statement. Mr. Cassidy declined to abate his expression. Mr. Peddie retorted that the Council would not be guided by the engineer, and they took their own way. Mr. O'Neill argued that they had purchased only five acres on Mr. Peddie's advice.

BELFAST.—THE WATER SUPPLY.—INAUGURAL CEREMONY

—The Belfast City and District Water Commissioners opened recently, with befitting ceremony and under most favourable auspices, their new pumping station at Oldpark, constructed and equipped with the most modern machinery to meet the wants of residents in the Ligoniel and Ballysillan districts of the city. Provision for these high-level suburbs is a new and commendable departure. To many of the younger generation it will be news that the pumping station, whose machinery was set in motion yesterday, is not the first Belfast has known. So long ago as 1807 Mr. William Ward, a leading practical authority on water engineering in Belfast for over half a century, constructed the town reservoir at the Basin Lane (demolished nearly a quarter of a century ago) which was supplied by an open conduit from Lester's Dam, situated near the second locks on the Lagan. During a water famine over thirty years ago a steam engine was erected near the river to pump the water of the canal into this dam to augment the supply, and another engine was placed at the Basin Lane for the purpose of forcing water into the town pipes against the pressure of that coming from the higher level of the Antrim Road works. In the vicinity of Basin Lane—now Bankmore-street—the thud of the pumps was heard incessantly, day and night, all the year round. The open conduit above referred to was probably the means by which the earlier water supply from New Forge was conveyed past Lester's Dam under the contract with William Johnston, who was called "Pipewater Johnston," from his having supplied the town with the old wooden water pipes, made from the trunks of trees hollowed out."

The New Pumping Station.

is most picturesquely situated at the foot of Cavehill, beside the existing high-service reservoir and near the Oldpark filters. It is supplied from the high-service reservoir through the medium of a convenient suction well, provision being also made for taking water direct from the filters. The works are capable of giving a supply of water to some 15,000 persons, and by working the engines for a longer period than nine hours per day the supply can be proportionally increased. The engines, which are of the horizontal triple expansion type, are in duplicate, so that in case of a breakdown one engine by working overtime can do duty for both. The high pressure cylinders are 9 inches diameter, intermediate $1\frac{1}{2}$ inches, and low pressure 24 inches diameter, with a stroke of 30 inches, and secured to cast-iron bed-plates. Each engine actuates a separate set of direct-acting tandem three throw plunger pumps, and the two engines working together are capable of raising 400,000 gallons of water to the service reservoir in a period of nine hours. The engines and pumps are securely fixed to massive bed blocks. Steam is supplied from two Hornsby water tube boilers at a pressure of 160lbs. to the square inch. The engine room is neatly lined with enamel brick, and lighted from the roof and side windows. The water is drawn by the pumps from the suction well already mentioned, and forced through a rising main of cast-iron pipes 12in. in diameter to a service reservoir situated at the Horse Shoe, about one mile from the pumping station. The service reservoir is about

600 Feet Above Sea Level,

the total lift from the pumps being 410ft. It is constructed of concrete, and is about 130ft. long by 97ft. wide, and with a capacity of about 800,000 gallons, and is covered with concrete slabs carried on steel beams with concrete piers and arches. The Ligoniel district will be supplied from this reservoir with the ordinary service and distributing mains and fire hydrants. A second pumping main has been laid from Oldpark for pumping water to the Ballyaghagan reservoir, and will be used for supplying portions of the Antrim Road and Cavehill Road district. The pumping engines and boilers were supplied and erected by the Glenfield Company, of Kilmarnock, at a cost of some £4,000, and the engines are of the most recent type. The building of the engine house and construction of the service reservoir was placed in the hands of Messrs. Henry Laverty and Sons, the contract sum being upwards of £10,000. The pumping mains from Oldpark to the Horse Shoe and to Ballyaghagan were both laid by Messrs. Henry Laverty and Sons, the cost of the work being upwards of £2,000. The pipes for the pumping mains and connections were supplied by the Stanton Ironworks Company at a cost of nearly £5,000. The whole of the works were designed and carried out under the direction of Mr. L. L. Macassey, M.Inst. C.E., for the Belfast City and District Water Commissioners; the resident engineer being Mr. Leonard M. Bell, A.M.I.C.E. The electric engine has been supplied by Messrs. Alley and McClelland, Glasgow; and the dynamo by Messrs. Parker, London; while Mr. Stanley Johnston, Donegal-street, has put in the self-contained electric installation, which has worked most satisfactorily up to the present, and is sufficient not only for the lighting of the pumping station, engine-house, and boilers, but the entire of the Oldpark filter works adjoining.

The Inaugural Ceremony

was, as we have said, performed under the most pleasant auspices. The sun shone radiantly, finding the stray clouds "not guilty" in this instance of complicity in the city and district water supply, genialising the expression of the Cavehill profile, plating the adjacent reservoirs with gold, and idealising the distant city despite its veil of smoke. Beside the smart little station was a marquee, suggestive of hospitality to those who drove up—many of them old residents in the city—becoming acquainted for the first time with the beauties of the locality. The host proved to be Mr. L. L. Macassey, B.E., M.I.C.E., consulting engineer to the Water Commissioners.

Mr. Macassey,

who was warmly greeted, said it was a matter for satisfaction that so many gentlemen had been able, at such a busy time of the day, to come from the centre of the city to visit their little pumping station at Oldpark. It might be asked why

should there be any formal inauguration of such a place. The reason was a very simple and a very short one—that pumping was a novelty in connection with the Belfast water-works, and therefore should be noticed by some formal ceremony, such as that in progress, affording, as it did, an indication not only of the prosperity and development of Belfast, but of the desire on the part of the Commissioners to form a water supply both good and efficient. The extension of the city boundaries added materially to the responsibilities and burdens of the Trust, and already it could be seen what practical steps the Commissioners had taken for the benefit of the Ligoniel and Ballysillan districts, which, by reason of their situation, were exceptionally difficult to supply. He was sure that installation of pumping power and supply of pure water to the residents on the high levels would not only be a source of satisfaction to the recipients, but would increase building activity in the neighbourhood affected, and in that way extend the progress and prosperity of the city.

Mr. Pim said Mr. Macassey's chief adviser on behalf of the Commissioners, Mr. Corry, had put into his hands an old newspaper dated 1837, containing most interesting matter relative to the attempts then made by some private parties to get control of the water supply—attempts happily defeated by the people of Belfast. (Hear, hear). The citizens had had control of the Belfast water supply for

Over one Hundred Years.

(Applause). In those times the control of the water supply was in the hands of nine gentlemen elected by a voluntary constituency. The ratepayers had the right to meet in the vestry of the parish church every year, and appoint twelve gentlemen who would now be known as valuers, and who would be very dear, he thought, to our hearts at the present time. (Laughter). They were known as "applotters," and had to act without any fee. The rate was then upon £5 to £10, Irish valuation, 6d.; £10 to £20, 9d.; £20 and upwards, 1s.; and the highest that could be levied was £5. (Hear, hear). The collector received £105 per annum; the turncock £27 6s.; the street inspector £23 8s.; and the engineer £100—but that was discontinued.

Historical.

In 1795 the Marquis of Donegal gave a lease to the Belfast Charitable Society of certain springs, and for forty-five years the water supply was in the hands of that organisation, managed by a committee of nine gentlemen, called "Spring Water Commissioners." About £30,000 of the poor's money was expended from time to time in supplying necessary capital, and in extending the water supply to Belfast, when, in 1840, an Act was passed constituting the present Water Board, who pay annually to the Society £800 per annum, and give a free supply of water to the house in return for this sum of money advanced and expended during forty-five years.

Early Valuation System.

The Spring Water Applotters referred to in Mr. Pim's speech were appointed in 1817 under "an Act for giving further powers to the President and Assistants of the Charitable Society of the Town of Belfast to supply the said town with water, and to improve their estates." This Act provided:—"That the said Spring Water Applotters, or any five or more of them, shall within ten days after their appointment proceed to ascertain the annual value of the different dwelling-houses within the said town, including in such valuation the coach-houses, stables, and other domestic offices thereunto attached, situate in such streets along which service pipes have been or shall be laid and supplied with water, and which houses are situated that they may receive the benefit of such water, and shall applot the sums to be paid by the owners or occupiers of such houses, which shall in their opinion be of the annual value of five pounds or upwards; and in such applotment, the said applotters are hereby required to specify the value of each house, the sum applotted thereon, the name of the occupier or possessor thereof, and the name of the street, and the number of the house where such street shall be named, and such houses shall be numbered." In the event of the applotters failing to perform this duty, the Commissioners are empowered to act."

THE USES OF COMPOBOARD.

The introduction of a new material as a substitute for natural wood, which, in addition to possessing unique qualities and a wide range of adaptability, is at the same time sanitary, possesses claims upon our notice, which although it appeals mainly to builders and architects, we can hardly afford to ignore. The material in question is known as Compoboard, as it is, as its name implies, of a composite nature. Its basis, which forms its core of inner part, consists of a serried range or course of slats of well-seasoned and carefully selected wood, each 1 in. wide, and $\frac{3}{8}$ in. thick, cut perfectly plane and true, and cemented together edge to edge with a special fire-proof substance, which forms also the adhesive for the densely-condensed pulp boards by which the range of wood slats are covered at top and bottom—that is on each side of the board. The materials thus arranged are subjected to immense pressure, and thus compacted into the most perfect union. The resultant Compoboard is a perfectly plane, rigid, solid, and homogeneous material, which can be sawn, nailed, screwed, glued, and in fact, treated in every respect as if it were simple wood, with the advantage that whereas natural wood will warp, shrink, crack, split, and bulge, Compoboard is tractable, durable, and adaptable, in every respect.

In ceilings, one of the great difficulties confronting the builder is to get a surface that will not crack when there is traffic above or vibration from machinery. Compoboard gets over this difficulty, and ceilings treated with it may be distempered, papered, or finished off with any decoration, however heavy. It can be fitted without any truss or press, and there is no waiting while the stuff dries before it can be painted and papered. Its lasting qualities added to its appearance render it invaluable wherever the ceilings of warehouses, schools, factories, and public institutions are concerned.

In regard to walls, Compoboard is a first-class non-conductor of sound, and thus eminently suitable for partitions. For lining iron and wooden buildings nothing could be more appropriate. Changes of temperature fail to affect it—no small consideration in hospitals abroad, where otherwise openings or cracks would afford a lodgment for vermin. The homelike appearance of a plastered interior is also infinitely preferable to matchboarding, which Compoboard seems destined to supersede. Whenever alteration and repairs are necessary the efficacy of this well-tried material is beyond question, and has already been demonstrated in every direction; in fact, it is questionable whether any recent inventions appealing to the building world has met with such instantaneous and unqualified approval.

We understand that the demand for Compoboard, already enormous, is steadily increasing, and it has already commended itself to the War Office and other Government departments. The railway companies are also largely using it for lining the better class of carriages; in fact, its all-round utility is little short of wonderful.

The space at our disposal is too small to do this subject justice, but we feel sure that any inquiries addressed to the British Compoboard Company, 18 Roscoe-street, Golden-lane, London, E.C., will be promptly dealt with.

Amongst other places in Ireland where Compoboard either has been used or is about to be, may be mentioned the new schools at Chapelizod, additions to Castleknock College, additions to the Monastery, Ardoyne, Belfast, etc., etc.

OUR ILLUSTRATIONS,

THE ROYAL VICTORIA HOSPITAL, BELFAST.

We have pleasure in publishing a view of the Administration and Extern Departments. Our readers will probably recollect our interview with the late Professor Cumming, M.D., of Belfast, in publishing which we gave a sketch-plan of the building and a descriptive outline of the scheme. Professor Cumming was one of the most enthusiastic promoters of the hospital.

In our next issue we propose to publish a second view and plans taken from the Architect's drawings.

The Royal Victoria Hospital, which marks an entirely new departure in hospital planning, has been designed by Messrs. Henman and Cooper, of Birmingham.

BELFAST ROYAL VICTORIA HOSPITAL.



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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4/- per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly begin the new century well by forwarding renewals to 11 Lower Sackville Street Dublin.

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MAY 8, 1901.

No. 991

The Corporation of Dublin and the Bye-Laws.

The Corporation have lately come in for a lot of abuse at the hands of some of our daily contemporaries, a good deal of which, it must be admitted, is thoroughly deserved. We don't grudge the Corporation all due credit for their efforts to improve the dwellings of the city poor, but it is clumsily done, and at vast cost. Certain owners of property are singled out for correction, and as a rule these are the more respectable, or perhaps we should say the most easily accessible owners. They are dragged to Court, bullied, held up to ridicule, punished and fined, often in open violation of the laws, simply because such owners are nearly as ignorant of the Public Health Act and other enactments as the average lawyer is—and that is saying a good deal. For instance, it would be interesting to know how many persons have, since the passing of the Public Health Act, been compelled to take up a good, bad, or indifferent drain which took the sewerage of more than one house and replace it by separate drains from each house—a gross violation of the law.

As a matter of fact, every drain which drains more than one house in the same ownership *ipso facto* becomes a public main sewer, and is maintainable by the Sanitary Authorities, no matter on whose land it lies—again, owners are often compelled to replace decent, cleanly, and dry privies in open situations by wet, sloppy, waterclosets which become regular hot-beds for the cultivation of bacteria, a course which no law of the land imposes; a privy being an earth closet within the meaning of the Public Health Act—while, all the while, the real delinquents escape "scott free," or, as one of our contemporaries some time ago remarked—"The further we examine into these Model Bye-laws the more puzzling does Sir Charles Cameron's description become. While the Corporation enactments are somewhat vague as to the sanitary accommodation to be provided, the Model Bye-laws state definitely and in detail what is required. The Model Bye-laws are specific as to the cleansing of premises, and the tenant's duties in this regard are fully set forth. The Dublin regulations, though they provide, as we have said, for the lime-washing of the premises by the landlord—a custom more honoured in the breach than the observance in most Dublin tenements—say nothing whatever about the sweeping and washing of floors, the cleansing of woodwork, the daily opening of windows, and the removal of all offensive matter from the interior of rooms every day. On all these important points the Dublin Bye-laws are silent, while the Model Bye-laws are explicit; and yet Sir Charles Cameron assures the citizens of Dublin that the code of regulations, which is 'constantly acted upon,' in Dublin is practically identical with this 'rather slender' Model Code!"

Our contemporary seems enamoured of the "Model Bye-laws,"—but a stupider and more ridiculous set of rules was never framed. Some of the local adaptations of these

"Model" Bye-laws are even worse, and cannot be enforced being in contravention of the law.

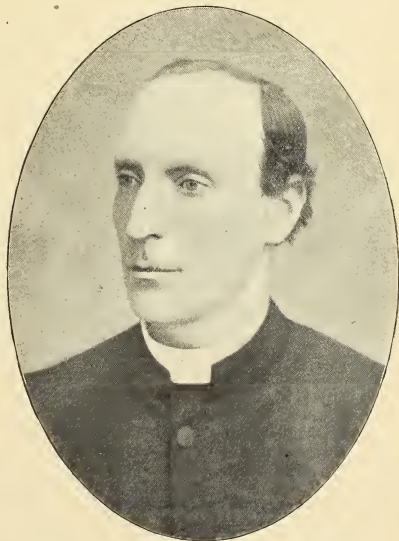
The Dublin Corporation and Utilisation of Sewage.

We understand that the "Utilisation of Sewage" scheme, on which Mr. Purcell read a paper before the Institute of Civil Engineers of Ireland recently, has been brought before the Improvement Committee of the Dublin Corporation, who have, with a wise discrimination, entertained the proposition of testing the matter by means of an exhaustive experiment, subject to a report from the City Engineer. This is as it should be, and we feel certain, from our own investigations on the process, that the result should turn out as satisfactory as the large trials mentioned by the author as having taken place at the Shale Oil Works did, in which event it should prove of great benefit to the city, and help to solve the knotty question of the disposal of the solid constituents of the deposited sewage.

THE VERY REV. JOHN M'MULLAN, C.P.

Father John MacMullan, whose portrait we have pleasure in presenting our readers, with, has, as recorded in our last issue, just settled probably the biggest strike which ever occurred in Ireland. The strike affected some sixteen hundred carpenters and the entire of the builders of Belfast, and it lasted twelve months, being fought out with the utmost obstinacy on both sides. Many of the most prominent men in Belfast tried to arrange a settlement between the masters and the men, but without success.

Father MacMullan is, in more senses than one, a "striking" personality, for he is a man of varied attainments and a wide range of knowledge. As an ecclesiastic, he has at a



The Very Rev. JOHN M'MULLAN, C.P.,
The Arbitrator who has just settled the Great Strike in the Belfast Building Trade.

comparatively early age attained a high position in the religious order of which he is a distinguished member. A traveller in many lands, strong as an educationalist and a mathematician, he has shone as a builder of schools and churches. At present he is engaged in the heavy task of building and finding the funds for a big church and schools, as well as additions to the monastery at Belfast, which forms his present charge. A native of the County Tyrone, his wanderings have led him through England, Ireland, Scotland, Australia, and America, and all over the Continent of Europe, back to his native Ulster. A ready and fluent speaker, possessed of intense activity and energy, added to a kindly and genial disposition, needless to say he is a general favourite with all creeds and classes.

THE GLASGOW EXHIBITION.

THE IRISH PAVILION.

The *Irish Daily Independent* publishes an interesting and exhaustive report of the Irish Pavilion at the Glasgow Exhibition. The Commissioner of the *Independent* observes:

Stained Glass.

The stained glass window with which Messrs. Ward and Partners, Belfast, have adorned this room is magnificent alike in its idea and in its execution. In the centre is a fine reproduction of the Mona-terboice cross, while in the Celtic panels of striking appearance are the names and arms of the four provinces and the capital city of each. The design of the cross is not entirely new to the country, as round about, particularly in the neighbourhood of Edinburgh, there are crosses of the Scottish Celtic design which are not unlike the Irish article. There is another stained glass window in this room, by Messrs. Ward and Partners, Belfast, vividly illustrating "Christ at the Carpenter's Bench." Messrs. Ward and Partners, Belfast, display on the porch door coloured and leaded panels representing St. Patrick and St. Brigid. The window is of artistic design, and an even more excellent example of their workmanship is their stained glass panel on the office door, suitable for domestic purposes. But the masterpiece of the firm's display in the Irish Pavilion is the screen which they have executed, with panels representing all Ireland's industries, including distilling, brewing, ship-building, agriculture, fishing, lace-making, and weaving. The window contains the following quotation in beautiful text:—"Man goes forth to his work and his labour until evening." It is safe to describe this grand piece of glass-work as a triumph of art.

Wood Carving.

An exhibit of peculiar interest is a reproduction of a marriage chest copied from the original in the Victoria and Albert Museum. This was sent in by Mr. Edmund Curry, of Abbeylax. Wood-carving is an art that is congenial to Irish manual talent, but when it takes a Celtic turn, so much the better for our nationality as well as for our trade. Miss Alice Shaw, of Mount Saville, Terenure, Co. Dublin, shows a series of panels, Celtic-carved, in green wood, the design and workmanship of which are equally effective.

Connemara Marble.

Mr. T. Dillon, of Galway, has put on exposition a varied lot of Connemara marble ornaments, which should sell rapidly, and become very popular at the Exhibition.

Water-Color Drawings.

The walls of room No. 2 are rendered attractive by a display of Irish scenery pictures by Mr. J. J. Johnston Inglis, R.H.A., which are certain to elicit the utmost admiration. In the hall of the pavilion there is a small but choice show of exhibits.

Heating and Ventilation.

Messrs. Musgrave and Co., Ltd., Belfast, show one of their patent slow-combustion ventilating stoves.

Metal Work.

Mrs. Montgomery, of Blessingbourne, Fivemiletown, has caused to be represented the flourishing metal industry recently started, which she is developing, by the display of three splendid panels for mantel-piece, a coal-scuttle, and fender, and two copper sconces, all of which are first-class samples of their kind.

Electric Lighting.

Messrs. William Coates and Son, Belfast, whose artistic lighting of the pavilion by electricity has been already referred to, shows a number of electro-plated standards of uncommon pattern.

Marble Work.

Marble ornaments, fashioned by Irish hands after tasteful styles, are sent on exhibition by Messrs. E. and L. Taddei, of Cork.

Engraving.

Flash-light photographs are displayed by Mr. Alex. Hogg, of 13 Trinity-street, Belfast, and they are very creditable specimens of this interesting art.

Mr. John Vinicomb, of Hollywood, Co. Down, has placed for inspection a number of very cleverly-executed engravings

for book-plates. It is a pity there is not more of this sort of work to be met with throughout the country.

Furniture.

Again there is to be met with an exhibit by Miss Shaw, of Mount Saville, Terenure, who reflects great credit on Ireland's industries by the beauty of design and execution manifested in her carved spinning-chair, walnut cupboard, and three panels for dado in mahogany.

A really striking exhibit has been arranged by the Killarney Furniture Industry. It consists of a complete bedroom, furnished *en suite* by native artifice. The furniture includes a bedstead, a dressing table, chairs, fire-screen, brackets, hand-glass, table, candlesticks. The furniture is of Irish manufacture, every inch of it. Every article is durable, looks well, and is comfortable in appearance. The sight of the suite teaches one lesson—there is no reason to pass by Killarney when there is need to stock a bedroom; and what is possible in this direction at Killarney—well, there is no saying how far is the field over which such manufactures may be spread.

Artistic Carpets.

To match the furniture made in the South there is close at hand a supply of samples of carpets made in the North. At the stand adjoining, Messrs. Millar and Beatty, of Grafton-street and Dawson-street, make a magnificent display of carpets from Donegal. One of these carpets, in fact, a nice shade of green, also covers the floor of the bedroom. This Donegal carpet industry is very properly being exploited at Glasgow, since it owes its inception to Scotland. Messrs. Morton, of Darvell, in Ayrshire, started a factory for carpets recently at Killybegs, Co. Donegal, and it is gratifying to hear that they are so pressed with orders that they cannot make carpets quick enough to supply the demand.

Bog Oak.

In Room No. 2 Messrs. Hamilton and Co., of Portrush, have brought together a number of ingenious samples of bog oak carvings.

Visitors to the Exhibition who are interested in Irish manufactures will be afforded every information concerning the subject if they will take the trouble to inquire at the pavilion. Irish patrons of the big Glasgow Show will find in the general exhibits many suggestions which might be applied for the development of their home industries, and Mr. Filgate will see—if they go to him—that they will be posted as far as possible in any details that may concern them.

The Pavilion Itself.

The interior of the Pavilion discloses a wonderful scheme of arrangement, consistent with economy of space. The exterior of the Irish section follows a beautiful design, the thatch and trellis work being the perfection of daintiness, while creeping plants are interspersed with fine effect. It has been suggested that the style of the Irish Pavilion might be copied in our country districts for the purpose of "bungalow" hotels of limited accommodation, where it would not pay to erect larger establishments. The idea is worth entertaining, the design being picturesque and serviceable.

We heartily endorse our contemporary's remarks on the suitability and picturesqueness of the Irish Pavilion. We have again and again deplored the passing away of the delightfully picturesque Irish thatched cottage and farmhouse. Perhaps this exhibition may instil a greater love for the picturesque into our architects and their clients. We believe the Government Boards actually refuse to sanction the use of thatch even in labourers' cottages! The pavilion was designed by Mr. Thomas Manly Deane, A.R.H.A., architect, Dublin (whose portrait, our readers will recall, we recently published). An old Georgian house near Malahide suggested to Mr. Deane a *motif* for his design, and he has added one more to the many successful and beautiful works with which the firm of Deane and Son have been for generations associated. In an early issue we shall present our readers with a view, together with plans and details, of the Irish Pavilion.

We had the opportunity of viewing Messrs. Ward and Partner's exhibits, and the beauty and artistic feeling of many of the designs, both in colouring and general treatment, are worthy of the highest praise.



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INSTITUTION OF CIVIL ENGINEERS.

PAPER BY MR. JOHN HENRY RYAN, C.E.

THE CLIFDEN AND GALWAY RAILWAY.

A general meeting of the Institution of Civil Engineers of Ireland was held at 35 Dawson-street. Mr. Edward Glover, C.E., president, occupied the chair, and there was a large attendance of members.

Mr. J. H. Ryan, C.E., v.-ce-president, read an interesting paper, illustrated by lantern slides, on "The Galway and Clifden Railway," in the construction of which he took a prominent part, in conjunction with Mr. Townsend, C.E., of Galway. It is the longest and most important of the several railways projected under the Light Railways (Ireland) Act of 1889. The railway traverses that part of the West of Ireland situated between Galway Bay on the south, County Mayo on the north, Lough Mask and Lough Corrib on the east, and the Atlantic on the west, known as Connemara, Jar-Connaught, and Joyce's County. This area is 750 square miles in extent, with an average population of 68 per square mile, the greater part of whom live along the coast line, which this railway does not touch, except at its termini at Galway and Clifden. The district is mountainous and rugged, and "abounds in bogs, lakes, and other natural curiosities," its soil consisting of equal quantities of earth and stone, and its surface being disencumbered of trees, shrubs, hedges, and ditches. The railway, which is some fifty miles long, was constructed, and is maintained and worked, by the Midland Great Western Railway Company, a free grant of £264,000 having been given to the company by the Government towards its construction. The general alignment of the railway is excellent, with very gentle curves and easy gradients. There are seven stations on the line, about seven or eight miles apart. Probably the most interesting engineering work on the railway is to be found in the bridges, the Corrib Viaduct, which carries the railway over the River Corrib at Galway, consisting of three spans, each of 150 feet, clear between bearings, and a lifting span of 21 feet, on the bascule principle, to provide for the navigation. Mr. Ryan gave a very interesting and graphic description of the different portions of the railway, and of the wild and romantic scenery through which it passes, the various views exhibited being exceptionally fine.

A cordial vote of thanks was passed to Mr. Ryan for his paper, which was greatly appreciated.

Messrs. R. G. A. Allanson-Winn, B.A. (Dublin), and James Jolly, B.A., B.E. (Harrogate), were elected members; Messrs. B. E. Fitzgerald Sheehy (Limerick) and C. E. Stuart Crawcour (Bray), associate member; and Mr. T. J. O'Neill (Belfast), an associate.

Is it not possible to make too much of Mr. Carnegie's munificence, especially when it is remembered that at the present moment he is endeavouring to add to them by a gigantic steel Trust, which will, if successful, play havoc with others less endowed with wealth? His workers at Pittsburg might also be found to hold strong views on the matter.

The Biggest Railway Refreshment Rooms (apart from hotels) are at York Station for travellers by the east coast, and at Preston and Carlisle Stations for travellers by the west coast. Of these three first-class refreshment rooms, probably the largest, and certainly the handsomest, is that at York, which, before the introduction of the dining-cars, was the recognised dining-place for the trains between England and Scotland by the east coast lines. From the expresses passing York in the early part of the afternoon at least a couple of hundred passengers were able to seat themselves comfortably to enjoy a mid-day meal. Similar provisions as to dining were made at Preston for London and North-Western passengers, and at Carlisle for those by the Midland. Times, however, are changed, for, in addition to the large number of passengers who dine on the cars provided on long distance trains for that purpose, each of the larger railway companies supplies from 30,000 to 40,000 luncheon baskets and from 50,000 to 100,000 trays of teas in the course of a year.

LAW CASES.

ARCHITECTS' CERTIFICATES.

Our readers must be all acquainted with the cases of *Chambers v. Goldthorpe* and *Restell v. Nye*, in which it was decided that an architect in giving a certificate was in the position of an arbitrator, and, therefore, was not liable for negligence. When they were decided we commented on these cases at length. It is, therefore, now sufficient to say that in the official Law Reports for April there will be found the opinion of the Court of Appeal on these two cases. The decision of that Court confirms the lower Court, and it is now definitely settled that an architect under the circumstances above stated is to all intents and purposes an arbitrator. The case of *Rogers v. James*, which was also a decision of the Court of Appeal, is distinguished, and we may regard the point as now beyond discussion for good or for evil. It is desirable however, to mention that the Lord Justice Romer differed from the other two judges. He considered that the authorities did not bear out the contention of his brethren, and he added that he considered that the liability of the architect to his employer for negligence was "more in consonance with natural justice." "It would be lamentable," he said, "that in cases of this kind an employer who pays an architect for supervising work, and who has sustained damage by his negligence, should have no remedy against him." It may fairly be stated that the law as it stands does not tend to care on the part of an architect, and puts a careless in the same position as a careful practitioner. — *Builder*.

WHAT OUR FRIENDS SAY TO US.

27 Chichester-street, Belfast, 30th April, 1901.

DEAR SIR,—I enclose postal order, value 8s., for two years' subscription to IRISH BUILDER. I congratulate you on the immense improvement effected in it since it changed hands, and hope to see its usefulness further extended by becoming a weekly instead of, as at present, a fortnightly publication.

You have my sincere wishes for continued and increased prosperity.—Faithfully yours,

J. J. McDONNELL, Architect.

Crumlin-road, Belfast, 26th April, 1901.

DEAR SIR,—Enclosed we beg to hand you 4 stamps, value 4s., being amount of our subscription for twelve months to the IRISH BUILDER, for which kindly let us have your receipt by return. You have invited an expression of our opinion regarding the BUILDER, and we beg to state that we are pleased with the articles and also the illustrations, and hope it will go on improving, and that you may have every success.—Yours truly,

JAMES HENRY & SONS.

Offices 28 Carlisle-road, Londonderry,

April 7th, 1901.

DEAR SIR,—I enclose subscription for the IRISH BUILDER for this year. Your paper of late is greatly improved, and I regret that it is not a weekly. Wishing you every success.—Yours truly,

JAMES P. McGRATH, Architect.



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LABOURERS' COTTAGES.

At the Congress of the Sanitary Institute Mr George H. Smith read some "Notes on the Construction of Cottages for Agricultural Labourers." He considered that £300 per pair of cottages would seem about the highest amount that can usually be spent in building. Every cottage should contain a parlour and kitchen, with small larder adjoining on the ground floor, and not less than three bedrooms upstairs. As a general rule the size of the parlour and kitchen should not be less than 150 feet superficial, and for the bedrooms 100 feet for one and 80 feet for the others should be the minimum. The height of the rooms on the ground floor should be 8 feet 6 inches, and upstairs 8 feet is the minimum, but if the ceiling is covered they should not be less than 5 feet for an area equal to one-half the floor surface. The front door should never open directly into the parlour, but into a lobby at the foot of the staircase, which tends to better ventilation upstairs. The kitchen should have a strong open range in preference to a closed kitchener, on account of its being more cheerful when the room is used for sitting in. A small stoneware white glazed sink should be provided in a convenient corner, and it is very desirable to fit up a strong enamelled iron bath near the fireplace, with a deal hinged top to form a seat when not in use. The hot water can easily be supplied from the range by means of a pail. All bedrooms should have fireplaces to assist in the ventilation of the room, and should also have additional means of air-inlet and outlet, such as a plain bracket box with an air-brick and flue through the wall and an outlet into a special flue in the chimney. The external walls should never be less than 9 inches in thickness, even if covered externally with rough cast or tile hanging, and on no account must the damp-proof course be omitted. The ground floor can be cheaply constructed with deal blocks 9 inches by 4 inches and 2½ or 3 inches thick, bedded in pitch and tar, and laid on a 6-inch bed of cement concrete. The upper floors, the author considers may, with great advantage and less expense than usual, be formed of 3-inch deal decking, tongued and grooved and caulked with tow, with the upper surface twice varnished, carried on timber beams about 4 feet apart. Partition walls should always be of brick in cement. The roofs should be boarded and felted, as this greatly lessens the cost of repairs. Party walls should never be carried through the roof, as it adds considerably to the cost, besides increasing the risk of rain entering. Waste water should be treated by sub-irrigation by a tile drain down in the garden, the liquid excreta being collected in a galvanised iron waggon, with a capacity sufficient to require emptying once a week. The water supply can often be obtained by means of a tube well at much less cost than sinking an ordinary brick-steined well, and at the same time preventing any risk of contamination of the water supply. Only the best materials and workmanship should be used; although perhaps more costly at first, there is a considerable saving in the annual repairs afterwards.—*The Architect.*

ASYLUM CONSTRUCTION.

At a recent meeting of the Edinburgh Architectural Association, Sir John Dribald read a very interesting and instructive paper on "Asylum Construction, looked at both from a Medical and Administrative point of view." He said that asylums for the insane poor had now become so prominent among our national and municipal institutions that it was of great public importance that correct views should be held as to the kind of building which was best suited for them. Then instancing the influence of medical views on structural design and arrangement, he selected a number of illustrative cases from the early decades of the nineteenth century, which were grouped as embodying in stone the older views, when as yet the spirit of Pinel and Tuke had not fully influenced the medical mind, and asylums for our poor lunatics were gloomy as a Norman castle, and cheerless as a city jail. To this period succeeded the transition stage, which lasted from the forties until the eighties of the nineteenth century. During this period better views on mental diseases

guided medical opinion, and its influence was seen in the new buildings erected and in the modification of existing ones during the period. The cells were got rid of, the huge walls that surrounded the recreation grounds were either wholly pulled down or so lowered as to lose their prison-like characters. Parliament took an interest during this period in the subject, and the Lunacy Acts of 1840 and 1857 gave power to local authorities to borrow money for the construction of suitable buildings. Sir John briefly described the old Derby County Asylum, with its rows of cells in prison-like galleries, identical in plan, and compared it with the London County Asylum at Bexley, which was opened in 1898, where the wards are specially designed for the patients they are to accommodate, according to the requirements of their different bodily and mental conditions—those requiring hospital treatment, for example, being placed in wards arranged like those of a hospital, and those in good health, and whose mental condition does not require them to be housed differently from sane persons, being placed in wards of more home-like character. This, the modern view of suitably housing the insane, may be termed the village system, or, as some prefer, the aggregated pavilion plan—a plan that grew around the shrine of St. Dymphna, that exiled Irish princess, who founded an asylum in Gheel, where the family system and rational system of treatment of lunacy naturally grew out of the conditions under which the afflicted lived, while waiting the festival of the saint. This type was illustrated by the Aet-Scherbitz Asylum, which has just been built in Prussia; it is difficult to meet all the requirements of mental diseases from the rates in a poor country like Ireland; it is, however, possible, by the selection of suitable sites, to surround the insane poor with natural objects of beauty, and divide them into little village communities within the asylum grounds, and substitute the family group for the convict gang like one that pains every sympathetic heart.

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CORRESPONDENCE.

THE LATE SIR RICHARD MORRISON, ARCHITECT,
AND MORRISON'S HOTEL.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—My attention has been called to a paragraph in your issue of the 27th ult., relative to above, in which my name is mentioned. I wish to correct two small inaccuracies in connection with same:

- (1) My relationship to the late Sir Richard Morrison is great-grandson, *not* grand-nephew.
- (2) My position in the Board of Public Works is *not* assistant surveyor.

The late Sir Richard Morrison, with his son and partner, William, lived, and had their offices, at No. 10 Upper Gloucester-street, and at Wallcott, Old Connaught, Bray. By inserting this in your next issue you will much oblige—Yours, etc.,

JOHN MORRISON.

Office of Public Works, Dublin,
27th April, 1901.

THE INSTITUTE DRAWINGS—ANOTHER PROTEST.

TO THE EDITOR OF THE "IRISH BUILDER."

10 Leicester Square, Rathmines,
April 26, 1901.

SIR,—It is encouraging to notice in the current issue of your journal that "Two Dublin Students," presumably members of the A. A. I., are interested sufficiently in their profession to criticise the action of the R. I. A. I. with regard to the recent exhibition of drawings. The most inconvenient hours for pupils and assistants were fixed upon for admission, and, as a final bar, the new red Institute ticket had to be shown. My sympathies are very much with those students who, hedged in by these restrictions, were unable to derive the benefit intended for them by the British Institute, and I think the complaint that the junior body did not endeavour, as in former years, to make the exhibition more accessible, is perfectly justified.

The committee meetings of the A. A. I. are held, however, in the middle of the day, which naturally means hurried discussion for those whose time is their own, and valuable, and abstention by those whose time is not their own. It is, in my opinion, very desirable that the committee should meet in the evening, when the many matters connected with an ever-growing society can be properly considered, and when younger members elected to the committee can attend without inconvenience to their principals.—Yours, etc.,

HARRY ALLBERRY.

ANSWERS TO CORRESPONDENTS.

We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

J. F.—Thanks; we are making use of your information. 't is certainly an "eye-opener."

J. M.—Many thanks; we feel very strongly on the matter to which you refer.

JAS. HENRY AND SONS, Belfast.—We are glad to learn you like the IRISH BUILDER illustrations, and we thank you for your good wishes.

L. L. MACASSEY, C.E.—Many thanks. It is very interesting. We return enclosure.

M. O'CALLAGHAN, C.E.—Thanks. We shall try and follow out your suggestion.

J. J. McDONNELL.—Your letter is very kind and flattering.

J. S. & Co.—If you will look at our last issue you will see a case reported which bears on the point, you raise.

J. B.—We hope to make use of the photos, later. Thanks.

Messrs. Henry Ough and Sons, "Offa" Ventilator seems to us a capital pattern. It opens easily, can be readily cleaned, and can also be made to harmonise with the style of decoration.

BREVITIES.

Messrs. Keiller's New Works, Silverstown, Essex, are being ventilated by means of Shorland's patent Exhaust Ridge Ventilator, the same being supplied by Messrs. E. H. Shorland and Brothers, of Manchester.

Prizes for Neat Cottages.—At a meeting of the North Dublin District Council Mr. McGough said he had seen that Mr. Wyndham had stated in the House of Commons that prizes could be given to the occupants of labourers' cottages for keeping them neat and clean. As the Council had a Technical Instruction Committee, he thought advantage should be taken of Mr. Wyndham's statement.—The Chairman: The County Council have set aside £25 for it, but I don't think we could do it.—Mr. McGough gave notice of his intention to move at the next meeting that the Council recommend the County Council to take advantage of the arrangement proposed by the Chief Secretary in the House of Commons, whereby prizes might be offered for the best kept and the neatest labourers' cottages.

The Largest Camera.—Some time ago the *Westminster* published a short account of the largest camera in the world. Further details are given in the April *Wide World Magazine*. The camera was "built" by the official photographer of the Chicago and Alton Railroad Company, and weighs, loaded, 1,400 lbs. When stretched to the utmost the bellows is twenty feet in length. One of the most difficult features of the work of construction was to secure lenses of the proper angles and focus for the photographic giant. It contains two, claimed to be the largest photographic lenses ever made. One is of the Zeiss pattern, with a focus of 5½ ft., while the other is what is known as a telescopic rectilinear lens of 10 ft. equivalent focus. The first lens is used for objects a comparatively short distance away, while the telescopic lens is of course used for distant views.

The plates for the camera were constructed from special patterns and at a very large expense, owing to the care necessary in preparing and spreading the solution upon their huge faces. The camera is large enough to contain two plates, which are placed in the holder. Some idea of the difficulty experienced in making these plates can be obtained when it is stated that each weighs over 100 lbs. When to be used the camera is placed upon a special train. Owing to the great size of the lenses about 2½ mins. are required in a strong sunlight to expose thoroughly a colour or isochromatic plate, while about 30 secs. are required for an ordinary plate. The developing of plates of the size used is no joke. It requires two or three experts, and is carried on in a laboratory specially constructed for the purpose.

The manufacture of concrete flags and setts from clinker obtained from one of the refuse destructor works is about to be carried out by the Corporation of Oldham. Paving stone made from clinker derived from the refuse destructor furnaces belonging to the Bradford Corporation is said to be of excellent quality. This stone will be used in future for any work under the Streets and Drainage Committee.

Bricks Made from Slag.—At the works of the George, Marien Mining and Smelting Co., at Osnabruck, the granulated slag from blast furnaces is mixed with slag cement in the proportion of one part slag to eight parts of cement, and the mixture is compressed into bricks weighing 7½ lb. After two or three months' exposure to the air, these bricks are suitable for building purposes. The bricks, it is stated, will sustain a pressure of 1,500 lb per square inch, and are suitable for resisting the high temperature of factory chimneys. It is claimed that the slag, finely granulated and mixed with cement in the proportions of eleven to one, furnishes excellent mortar.

An extremely long stone arch bridge is now being constructed at Luxembourg, over the valley of Petruffe. This arch will have a span of 277 ft., and a rise of 102 ft. The total width of the available roadway is 52 ft., and this width is divided into two parts by a space 19 ft. wide, covered by slabs of armoured concrete, and carrying the footways.

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ARTS AND HANDICRAFTS.

Every Second Wednesday.

[Estab. Jan. 1859.]

No. 993—Vol. XLIII

HEAD OFFICE

MAY 23, 1901.

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TOPICAL TOUCHES.

More deposits of gold have been found at Leith.

Kodak, Ltd., are attempting a corner in camera apparatus.

Italy is sending 40,000 emigrants to the United States next month.

The bubonic and small-pox plagues have cost Glasgow nearly £50,000.

The Irish Architectural Association talk of an excursion to the Glasgow Exhibition at the end of June.

We have received a very exhaustive treatise by Mr. R. T. Thomson, entitled, "The Workmen's Compensation Act, 1897: A Plea for Revision." The book deals with matters of such great importance to builders that we shall review it at some length in our next issue.

At Christie's 2,000 guineas has been paid for "The Annunciation," signed by A. da Solario, and dated 1506. Velasquez's Head of Philip IV. in armour, was bought for 950 guineas, and Gainsborough's portrait of Sir Twedale T. Price, was estimated at 310 guineas.

The London Architectural Association sends us a syllabus of the new day classes lately inaugurated. The course is a most comprehensive one. Still it was upon the old system of voluntary instructors and night classes that the A.A. has reached its present grand position of practical usefulness. We wish the scheme every success, but we trust the Association won't drift into a seminary for young gentlemen.

The best way to use Killaloe slates is to have them cut small and thick; never mind if they appear rough, they will look all the better for it on the roof. The company have now a large number of men employed in this industry, and we have received samples of the "twelve by tens"; they are really a capital slate, capable of giving a good artistic effect on account of their fine grey green colour and thick, coarse edges.

The sales at the Royal Hibernian Academy are this year less encouraging than ever—only about £113 worth of pictures have, up to the present, been sold. If the Council was in a position to establish an annual travelling studentship, there is little doubt but our young Irish artists would be greatly encouraged and stimulated to excel in their art. The tax of a lengthened sojourn in Italy, for instance, is one which few students can at present regard as easily compassed.

We much regret to notice the death of Mr. Martin Morris, C.E., late Board of Works, which occurred at his residence, Drumcondra. The deceased gentleman was well known and respected throughout the country, particularly about Limerick. Retiring some years ago, he threw himself into politics with great ardour, and at the time of the Parnell "split" was one of the most active anti-Parnellites, working incessantly in the cause of the Federation.

The danger represented by over-crowding in tenement houses has never found more tragic exemplification than in the case of the Green-street fire. Several families were herded together in an old building, in the basement of which there was a considerable storage of straw. How precisely this inflammable material went ablaze has not satisfactorily been explained, but the consequences of the accident were sudden and shocking. Four little children sleeping in the top room of the tenement house were suffocated by the dense smoke.

Artists are not very cheerful over the financial results of their year's art; for the sales from the New Gallery and the Academy have been few and far between. One painter, at least, looks cheerfully on recent events, and that is Mr. Val Prinsep. But his cheerfulness has little to do with art. Mr. Prinsep has for many years been one of the wealthiest of artists, and the fortune his wife brought him has enabled him to be a patron as well as a painter of pictures. The past few weeks have added considerably to the large fortune of Mrs. Prinsep, through the purchase by Mr. Pierpont Morgan of the Leyland line of steamers; for Mrs. Prinsep was a Miss Leyland, of Wootton Hall, Lancashire.

The Council of the Society of Architects, in view of "A Bill for the Registration of Architects" now before Parliament, consider it desirable to ascertain the attitude of the architects of Scotland on this important subject, and are holding a series of meetings, to which architects are invited. Meetings convened by the Society of Architects have already been held at Cardiff, Newcastle, Leeds, Sheffield, Birmingham, Bristol, Exeter, Liverpool, and Manchester, at all of which resolutions approving the principle of statutory examination and registration have been passed. Meetings will be held on May 29th and 30th at Edinburgh and Glasgow respectively.

Raby, the ancient seat of the Nevilles (it came into the Vane family in the reign of James I.), is generally reputed the finest castle in the North of England. It lies rather low, unfortunately, and there is a want of fine timber about it; but the buildings, which are of immense size, including numerous towers and enclosing three courtyards, are extremely imposing. A unique feature is that carriages drive straight into the interior of the vast hall, with its arched roof and octagonal pillars. Above this hall is another—the Barons'—more than a hundred feet long, which has recently been fitted with bookcases and otherwise made habitable. Another curiosity is the ancient kitchen, with its enormously thick walls, galleries, and huge ovens. The castle contains many fine pictures and other art treasures including Hiram Power's famous "Greek Slave." The present head of the House of Neville is Lord Barnard.

The President of the Institution of Civil Engineers, Mr. Glover, told a good story at a meeting the other night. Many years ago, when he possessed much less experience than now, he had to build a new bridge in the West. He visited the locality and instituted inquiries amongst the oldest inhabitants with a view to determining the size and character of the proposed structure. As a result, the answers to his questions led to the conclusion that something a little larger than the Forth Bridge would meet the requirements of the case. Confiding his doubts to the carman who drove him the latter said: "Wouldn't it be a good idea to have a look at the size of the bridge lower down the stream!"



Blackrock.—The Urban Council seek tenders for alterations and additions to the premises of the proposed new Technical Schools.

Carlow.—ERECTION OF COTTAGES.—The Chairman said he had written to the Local Government Board with reference to the laying out of sites, as the season is advancing, and asking how soon they could commence the erection of cottages, and had received the following letter :—

“Dublin, May 8th, 1901.

“SIR,—With reference to your letter of the 4th inst., relative to recent local inquiry, held into the Improvement Schemes made under Labourers’ Act with respect to the Slieveargy Rural District, I am directed by the Local Government Board for Ireland to state that they expect that in the course of the next four or five weeks the proposed sites of cottages will be inspected, and Inspector’s report furnished on the local inquiry. No unnecessary delay will be made in communicating result of inquiry to the District Council and in preparing the Provisional Order confirming the schemes. As you are, no doubt, aware, the Provisional Order to be issued with confirmation of the schemes cannot become absolute in any case until a month has elapsed from the date of publication of the Order. When the Order has become absolute, application for sanction to the loan required can be made by District Council, and as soon as the Lords of the Treasury have signified their assent to the granting of the loan, the Council can take steps for carrying out the Improvement Schemes.—Your obedient servant,

“H. M. SWAINE, Secretary.”

Dublin.—IRISH SLATES.—At the last meeting of the South Dublin R.D.C., a statement having been made at the previous meeting that the Killaloe Slate Company had raised the price of the slates which the Council had contracted for in connection with labourers’ cottages, a letter was received from the secretary of that company stating that the price of the slates had not been raised.—The Council decided to adhere to their former resolution to use Killaloe slates.

DUBLIN SCIENCE AND ART BUILDINGS.—In the House of Commons, Mr. Wyndham informed Mr. Field that the site selected for the erection of the buildings of the Science and Art Department in Dublin was still available. Provision was made in the Estimates for the current year in respect of the preliminary measures towards the erection of the new college. The report of the committee on the requirements of the college was now before the Board of Works, who would proceed to work out a scheme with all due speed. There were some difficulties of a practical nature which would prevent operations from proceeding too rapidly.

It takes us back a good way in the history of Dublin to find the date of the building of St. Thomas’s Church, Marlborough-street. A century and a-half ago the citizens must have been talking and considering about it, for we notice that the year 1758 is stated as that in which it was built. When we think of all the scenes in history through which the old place of worship has been in existence, quietly doing the work for which it was intended, we are surprised to find it has survived so long. The custodians of this city church of so many years standing are now appealing for funds to make some necessary repairs that it needs, and to do the painting that has been left over for many years for lack of means. When one recalls the wealth and fashion of the residents round about the

Church of St. Thomas who often must have filled the pews in the century before the last, there is something pathetic in realising how all that has changed, and the splendid houses that were the homes of the rich and noble are now occupied by numerous families of the very poor. Only the old Church remains the same, but showing sadly how time has not forgotten it as it passed.

Dundalk.—Tenders were received on Saturday last for two dwellinghouses at M’Dermott’s terrace, Dundalk. Mr. A. T. M’Nair, of Dundalk, is the Architect.

Killaloe.—A new Provincial Bank is to be erected here.

Killucan (Co. WESTMEATH).—Messrs. A. Scott and Son, of Drogheda, have prepared plans for alterations to the R.C. Church, including new organ gallery, windows, etc. Tenders are called for.

Loughlinstown.—The Board of Guardians of the Rathdown Poor Law Union will, on 20th inst., consider tenders for the new chapel and nuns’ residence at the Workhouse. Mr. P. F. Comber, C.E., is the Architect, and the quantities have been prepared by Mr. D. W. Morris, 68 Harcourt-street, Dublin.

Newry.—REBUILDING OF THE WORKHOUSE.—The Clerk said that the Board was specially summoned that day to consider, amongst other things, a report from the Rebuilding Committee. After the summonses for the meeting had been sent out, however, he had received the following letter, dated 30th ult., from Mr. J. Brown, Architect, Newry :—“Being in doubt as to the re-arrangement of the workhouse plans, and not being able to get any information from the Rebuilding Committee as to what was wanted, I was compelled to get some information from Mr. Cowan, and from what I have learned there is considerable change to be effected—more so than I was aware of; and as I have only got to know these facts quite recently, I am sorry that I cannot have sketch plans for Saturday first, and would ask you as a favour to have meeting of committee deferred for a fortnight. At any rate, Mr. Cowan informed me that he could not attend on Saturday.”

THE WORKHOUSE PLUMBING.—Messrs. Kaye-Parry and Ross, Engineers, Dublin, wrote :—“Yours of the 1st inst. to hand, and contents noted. I think your Board were quite justified in adhering to their original decision of offering Messrs. Mackey £110. Mr. Mackey distinctly promised me that he would send up his invoices the same evening, but this he failed to do, and my report was written before I saw them. He deserves to suffer for not keeping his promise. I think that Dockrell charged a very large sum for the pony gear; I could not allow as much as they charged, but I believe I allowed enough to cover the real cost of suitable gear.”

Pembroke.—THE URBAN COUNCIL.—Mr. Coffey said that in consequence of the present state of the money market he thought that instead of endeavouring to raise money for the erection of working-class dwellings by the issue of stock, they should go to the Board of Works for it. The terms on which they would be able to obtain it from them would not be more onerous than would be involved in the issue of stock. He moved that the Clerk be directed to take the necessary steps for obtaining from the Board of Works the loan which had been sanctioned by the Local Government Board for erection of working-class dwellings at Ringsend. Mr. King asked what interest would have to be paid to the Board of Works? Mr. Coffey said it would be paid according to a sliding scale. They would be entitled to spread the loan over 50 years, and on the first year the interest would be about £5 5s. per cent., and it would become less and less each year until at the end of that period it would be about £2 per cent. Mr. Ramsay said this was a matter requiring consideration, and they should not rush blindly into it. They should have definite information from the Board of Works as to the terms on which the money would be granted. It would be better if Mr. Coffey gave his proposal as a notice of motion. Mr. Coffey said he would allow it to fall through now, as there was no seconder.

Rathdown (Co. DUBLIN).—The District Council advertise for tenders for 21 labourers' cottages under Scheme No. 3. Estimates will be received up to 28th inst. No. 4 Scheme is in course of preparation. Mr. R. M. Butler, Dublin, is the Architect.

Sligo.—CARNEY AUXILIARY DISPENSARY.—A letter was read from the Local Government Board relative to a loan for the Carney Auxiliary Dispensary House. Mr. Colleary—Have the plans been received? Acting Clerk—I have not received any plans. A Guardian—Proceed with the work as soon as possible. Mr. Harte—Mr. Kilgallen measured the place the other day, and said he would have the plans immediately. Mr. J. McGowan—you must have the plans in first before you ask for the money. Mr. Harte described how the local committee met and did all they could do. A Guardian—I am on the committee, and got no notice. The Acting Clerk was directed to write to Mr. Kilgallen for the plans.

Wexford.—White's Hotel, Wexford, which is in the foremost rank amongst Irish provincial hotels, has been recently considerably improved, and within the last few months an entirely new wing has been added. White's stands high in the esteem of travellers, and everyone who visits the quaint but up-to-date little southern town brings away with him pleasant memories of comfortable nights passed at White's Hotel. The accommodation has been considerably improved by the addition of the new wing, which comprises nine large airy bedrooms on the western side of the house. Over £4,000 has been expended on improvements under the superintendence of the present energetic manager, Mr. Hugh McCarthy. With all its modern appliances and up-to-date appearance White's has a history of a hundred year's behind it, and many are the strange tales that are told of the doings of its guests in the wild and boisterous days of the first half of the last century.

A great number of complaints have been coming in from the union tenants in the several districts, about the state of their cottages. Looking over the names of the applicants for repairs, the Chairman noticed that those who are awarded prizes for well-kept cottages never ask for improvements, as they care their houses properly themselves, and the rest keep up a perpetual clamour for improvements. After some discussion the Board came to the conclusion that they would put doors on the stairs of those who had applied, and the other matters would be held over until July to make fuller inquiries.

Belfast.—NEW FISHERWICK PRESBYTERIAN CHURCH.—The new Fisherwick Presbyterian Church was opened on the 28th ult. The new building, which has cost about £16,000, comprises chancel, nave, transepts, aisles, organ-chamber, choir, practice-room, vestry, and committee-chambers, and a small western gallery. The style is the Early Perpendicular, and the church is apsidal. Contiguous to the choir is a chamber on the north side of the chancel for the organ. The nave is divided into five bays and transepts, having lofty stone arches resting on pillars. Each bay is furnished with tracery windows and stained glass. The western end has a small gallery, under which is the porch and principal entrances. On the north-west side are the tower and spire, rising to a height of 138 ft. The length of the nave inside is 82 ft., and the length of the chancel 30 ft. The width of the nave inside is 45 ft., and of each of the side wings 12 ft. The roof is open-timbered. There are five east windows filled with stained glass. The church has been connected by telephone with the houses of several members of the congregation who are too infirm to attend the services. In addition to the church buildings proper there is a lecture hall, with schools and caretaker's residence. These are carried out in harmony with the style of the church. The stained glass was provided by Messrs. James B. Campbell & Co., and the mosaic pavement by Messrs. W. D. Henderson & Sons. The heating, which is on the Plenum system, has been carried out by Messrs. Davidson & Co., Belfast. Messrs. Wm. Costes & Sons were responsible for the electric lighting and fittings, from particulars given by Mr. W. D. Ferguson, electrical engineer. The carved oak pulpit was made by Messrs. Purdy & Millard. Mr. Robert Corry, J.P., had charge of the building contract, and Mr. Samuel P. Close, whose designs were selected in competition, acted as architect.

QUEER EPITAPHS.

Here are a few queer epitaphs culled from various churchyards:—

Beneath this smooth stone, by the bone of his bone,
Sleeps MASTER JOHN GRILL:
By lies, when alive, this attorney did thrive,
And, now that he's d-d ad, he lies still.

Sometimes the medical faculty does not shine well in epitaph. The following reflection, "on a large, fat physician," is ungenuous:—

Take heed, O good traveller, and do not tread heed,
For here lies Dr. STRATFORD in all this churchyard.

And again, in the same style:—

Here lies the corpse of DR. CHARD,
Who filled the half of this churchyard.

Less unkind is the grim facetiousness on an undertaker:—

Here lyeth ROBIN MASTERS—Faith, 'twas hard
To take away our honest ROBIN's breath.
Yet surely ROBIN was well prepared:
ROBIN was always looking out for death.

The architect of the town hall of Newcastle, who was buried in Gateshead Cemetery, nearly opposite that edifice, was not so fortunate in the kind of immortality that hedges an epitaph. There is an *ultra* "note of provinciality" in—

Here lies THOMAS TROLLOPE,
Who made these stones roll up;
When death took his soul up,
His body fill'd this hole up.

If "brevity is the soul of wit," the following from St. Dunstan's, Stepney, deserved to be recorded:—

Here lies the body of DANIEL SAUL,
Spitalfield's weaver, and that's all.

The next couplet, in the same manner, on a dyer, is somewhat better:—

Beneath this turf a man doth lie
Who dyed to live, and lived to die.

The next sounds like the chorus of bacchanalian song over the grave of a departed parson:—

Come, let us rejoice, merry boys, at his fall;
For egad, had he lived, he'd a-bury'd us all.

This reminds us of the kindred, but yet more telling, epitaph on Robespierre:—

Passant ne pleure pas ma mort:
Si je vivais tu serais mort.

Very expressive is Franklin's famous epitaph on himself:—

The body of
BENJAMIN FRANKLIN,
Printer,
Like the cover of an old book,
Its contents torn out,
And stripped of its lettering and gilding,
Lies here, food for worms.
Yet the work itself shall not be lost,
For it will (as he believed) appear once more,
In a new and beautiful edition,
Corrected and amended
by
The Author.

An equally good parallel to this is found in Sydford churchyard, Devonshire:—

Here lies, in horizontal position,
The outside of GEORGE ROUTLEDGE, watchmaker,
Whose abilities in that line were an honour to his profession.

Integrity was the Main-Spring, and Prudence the Regulator. In all the actions of his life, humane, generous, and liberal, his Hand never stopped till he had relieved distress. So nicely regulated were all his Actions that he never went wrong, except when set a-going by people who did not know his Key; even then he was easily set right again. He had the art of disposing his time so well that his Hours glided away in one continual round of pleasure and delight, till an unlucky Minute put a period to his existence. He departed this life 14th November, 1802, aged 55, wound up in hopes of being taken in hand by his Maker, and of being thoroughly cleaned and repaired, and set a-going in the world to come.

There is an intentional use of vulgar images in the next, on David Fletcher, smith to Lincoln church, 1744:—

My sledge and hammer lie reclined;
My bellows, too, have lost their wind;
My fire's extinguish'd; forge decay'd;
And in the dust my vice is laid;
My coal is spent; my iron's gone;
The last nail's driven—my work is done.

And pitched in the same key is the following:—

Here lieth JOHN CRUKER, a maker of bellows,
He's craft's-master and king of good fellows;
Yet when he came to the house of his death,
He that made bellows could not make breath.

There is a neat turn in the couplet, "On little Stephen," a noted fiddler in Suffolk:—

STEPHEN and Time are now both even:
STEPHEN beat Time; now Time's beat STEPHEN.

In Lincoln Cathedral, there is the following Latin inscription, 1616, to Dr. Otwell Hill:—

MONS SACER OTWELLI sacrosancti noinine Christi
Hoc in Monte Deum nocte dieque colens:
Hoc in Monte Dei populo jus dicit, et inde
Noribus infames ad meliora vocat.
Excipiunt Montes Domini Montem norientem,
Mons Lincoln corpus, Monsque Sion animam.

which has thus been quaintly translated:

"'Tis OTWELL HILL, a holy Hill, and truly sooth to say,
Upon this Hill he praised still the Lord both night and day.
Upon this Hill, this HILL did cry aloud the Scripture letter,
And strove your wicked villians by good counsel to make better.
And now this HILL, though under stones, has the Lord's Hills to lie on;

For Lincoln Hill has got his bones, his soul the Hill of Sion."

There is a quaint humour in the unpuritanical religious sentiment expressed in the quatrain on Jane Parker in Peterborough Cathedral, 1653:—

Here lieth a midwife, brought to bed,
Deliveresse delivered;
Her body being church'd here,
Her soul gives thanks in yonder sphere.

In St. Mary's, Warwick, is a tombstone which records that the bold Militiaman who lies beneath it "died of a fit of beer-drinking," and that the stone was raised by his comrades to record that interesting fact.

We have a good example of vulgar imagery and objectionable gaiety in the following:—

Beneath in the dust, the mouldy old crust
Of NELL BACHELOR lately was shoven;
Who was skill'd in the arts of pyes, custards, and tarts,
And knew every use of the oven.
When she'd lived long enough, she made her last puff,
A puff by her husband much praised;
Now here does she lie, and makes a dirt pye,
In hopes that her crust will be raised.

A plain unvarnished tale surely is that on the rector of Hampton Redware, Staffordshire:—

Underneath lyeth the body of
THO. ALLESTREE, M.A.,
Who was a minister of the Church of England 54 years,
He composed 500 sermons and preached 5000 times.

Nothing vulgar, gay, or ecstatic here, but the simple fact "writ large." Pity the faithful chronicler did not add to the statistics of the good man's life, culled from the parish register, and make imperishable the number of christenings, marriages, and burials performed during his ministry.

A tombstone in the old church at Disley, near Stockport, of the celebrated centenarian, Joseph Watson, of Lyme, is inscribed as follows: "The remains of Mr. Joseph Watson were buried here on June 22nd, 1753. He was born at Mosley Common, in the parish of Leigh, in the county of Lancaster, and married his wife from Eccles in the said county. They were a happy couple for seventy-two years. She died in the ninety-fourth year of her age; he was in the 103th year of his age. He was park-keeper to the late Peter Leigh, Esquire,

of Lyme, and his father for sixty-four years. He did show the red deer to most of the nobility and gentry in this part of the kingdom to a general satisfaction to all whoever saw them, for he had driven them and commanded them at his pleasure, as if they had been common horned cattle. In the reign of Queen Anne, Squire Leigh was at Macclesfield in company with a number of gentlemen, amongst whom was Sir Roger Mason, who was then one of the members of the said county. They being very merry and free, Squire Leigh said his keeper should drive twelve brace of stags to the forest of Windsor, a present to the Queen. Sir Roger opposed it with a wager of 500 guineas, that neither his keeper nor any other person could drive twelve brace of stags from Lyme Park to Windsor Forest on any occasion. So Squire Leigh accepted the wager, and immediately sent a messenger to Lyme for his keeper, who directly came to his master, who told him that he must immediately prepare himself to drive twelve brace of stags to Windsor Forest, or to any other part of the kingdom by his worship's direction, or he would lose his life and fortune. He accordingly undertook and accomplished this most astonishing performance, which is not to be adequately in the annals of history. He was a man of low stature, not bulky, of a fresh complexion, pleasant countenance, and drank one gallon of malt liquor one day with another, for about sixty years of his time, and at the latter end of his time he drank plentiful, which was most agreeable to his constitution, and a comfort to himself. He was a very mild-tempered man. he knew behaviour, and was cheerful company, and was allowed by all who knew him to be as fine a keeper as any in England. In the 103rd year of his age he was at the hunting and killing of a buck, much to the astonishment of George Warren, in his park at Poynton, and performed that diversion with astonishment. It was the fifth generation of the Warren family he had performed that diversion in his time at Poynton Park." The stone lies in the centre aisle of the old church.

The epitaph of Sir John Vanbrugh, the architect of Blenheim Palace, and many other well-known buildings, is often quoted:

"Lie heavy on him earth,
For he laid many a heavy burden on thee."

(Sir John was famed for the ponderous and monumental character of his designs.)

Messrs. Jas. Duthie and Sons have supplied a great quantity of their admirable "Duresco" for the Glasgow Exhibition

A Paris street is to be named after the famous architect, the late M. Charles Garnier, who designed the Opera House. Architects have been similarly honoured in England, notably in the case of the district in the Strand, W.C., known as the Adelphi (signifying "The Brothers"), where also we have Adam-street, Robert-street, and James-street. They were all named after the brothers Robert and James Adam, who were much employed on mansions and public buildings in that quarter of London. Robert died in 1792, and James in 1794.

A chimney 460 ft. high is to be seen at the works of the Royal Foundry of Saxony, at Halsbrucke, in Freiburg. The chimney is 44 ft. 3 in. square at the base, and is 4 ft. in internal diameter, and in order that the gaseous products issuing from the outlet should cause as little annoyance as possible in the neighbourhood, it has been built on a hill, the top of which is about 200 ft. higher than the plain in which the works are situated. Consequently the smoke and gases are sent into the air at a total elevation of 660 ft. above the place where they are produced. The works, being situated at some distance from the chimney, had to be connected with it by a shaft nearly 400 ft. long, which had to be carried on a bridge specially constructed across the River Mulde, which flows between the works and the hill. The cost of the chimney alone was more than £6,420; that of the shaft, £5,200—making together £11,620. It is built of perforated bricks of radial form made of highly refractory clay, and burnt at a temperature of about 2,000 degs. C., which imparted considerable hardness, to them, and made them practically impervious to water.

CORRESPONDENCE.

DUBLIN ELECTRIC LIGHTING.

TO THE EDITOR OF THE IRISH BUILDER.

SIR,—The report in to-day's papers of the meeting of the Council of the Corporation yesterday regarding the above is both instructive and disgusting—instructive, because if anything will open the eyes of the citizens to the incompetency of the Corporation to deal with this matter it was the wretched, crude manner in which the whole thing was handled at yesterday's meeting; "disgusting" because the ratepayers certainly look to have their business attended to in a business-like manner, and not in a personal one. Scurrilous were the epithets hurled at each other by the Councillors present, in their wrath; charges of fraud, lying, and falsification of documents were thick as leaves on Vallambrosa's strand, and the word-painting by members is, I think, unique even in the annals of the Corporation. There is an ancient proverb that, when certain people fall out, certain others will regain their own. Let us pray that this may not occur now. So much for the scene. Let us now come to the facts of the case, which, as disclosed by the meeting, are probably more serious than the public have any idea of.

Firstly, we have the exhibition of the Corporation—or at least a section of them—entering into contracts, and pledging, as they think fit, the citizens' credit, after having been strenuously warned by the Board of Works that such a proceeding will not be tolerated without their authority. This in itself ought to be an indication to the Treasury as to the class of persons to whom they are asked to advance money, to the detriment of the citizens; because people who can act in such a manner, and make the inaccurate statements as reported, are certainly not those upon whom the citizens can either rely, or, in any degree, trust; but even now the full state of affairs has not been discussed by any means. How is it that the supplementary loan of over £10,000, which was applied for to the Local Government Board was not brought up at yesterday's meeting? And, most pregnant of all, how is it that it was withheld from the knowledge of those attending, that the Local Government Board would only sanction £4,000 and odd of the money already expended? Who is to pay the balance? Is it to be juggled into some side account, or are those who, for reasons which we do not care to speculate on, spend this money to be surcharged and made pay for it? I understand that the work of pulling down the Pigeon House Fort has commenced. I hope foundations may be obtained for the power station; but, I would ask, is it not a fact that at the present moment, after most elaborate preparations for draining the harbour, to lay the foundations, for the settling tanks, for the new sewerage scheme, that the contractors for these are unable to do so, as there is nothing to build a foundation on, and water and mud are coming in quicker than they can take it out; and is not this "creep" into the harbour likely to destroy the present walls by the shifting of the material from beneath? If such a thing as this happened in any English town, the citizens would have long since been up in arms, and demanded either a Government or an independent examination and opinion thereon. Here I fear the former would be useless, as I am given to understand that on the day that Mr. Hammond and the Sub-Committee interviewed Sir Henry Robinson, of the Local Government Board, regarding the period of an extended repayment, a letter was received by that Board requesting the Local Government Board to "grant nothing" until that Board had had the opportunity of meeting a deputation of some of the most influential and largest ratepayers; the reply was characteristic, and to the effect that the deputation referred to was not coming for the purpose of getting further monies, but about the terms of repayment of the originally past loan. When the memorial was presented the same Board notified there was no necessity for them to receive a deputation, as the matter had practically passed out of their hands. Now, it would be well for the citizens to understand clearly whether the Local Government Board exists for the citizens or the citizens exist merely to pay the salaries of the Local Government Board. An answer from Sir Henry Robinson would be instructive.

It now rests with the Treasury, who have also been memorialised, whether they will attend to the interests of the citizens or allow them to be hurried into civic bankruptcy without any exhaustive inquiry as to the merits of the scheme. I think we need be under no apprehension. In Sir Robert Arbuthnot Holmes, the Treasury Remembrancer, and in the new chairman of the Board of Works, I think the citizens must feel that they have now two gentlemen who will not allow the Treasury to advance money which the city will be unable to pay, and which will mean a burden upon the ratepayers that none of this generation, or probably their children, will ever find removed from off their shoulders; and which will cripple legitimate enterprise and tend to continue the city in the condition of death and desolation wherewith it reeks at the present moment for want of proper housing of the poor.—Yours, &c., C. E.

May 14th, 1901.

—:o:—

Uses of Mineral Rock Asphalt.—The various purposes to which Mastic Asphalt may be put to are almost innumerable, and to merely mention a few, these Mastic Asphalts are being very largely adopted by the principal architects and engineers for roofs, floors, bridges, barracks, fortifications, powder magazines, quays, wharves, barns, footway pavements, granaries, drill grounds, breweries, stables, coach-houses, court yards, railway platforms, warehouses, basement floors, covering of railway and other arches, damp-course to horizontal walls, vertical work to face of walls, swimming baths, skating rinks, tennis lawns, lining reservoirs, slaughter-houses, market places, piggeries, dog kennels, garden paths, and play grounds to public schools of the metropolis and leading provincial towns in the United Kingdom. Again, Mineral Rock Mastic Asphalt used for floors for public and private latrines is, for similar reasons, much superior to any other kind of flooring, especially on account of its durability, the ease and rapidity with which it can be cleaned or repaired, and, not least, its great sanitary properties, because, being jointless, no vegetable or animal refuse can lodge in crevices and decay. Mineral Rock Mastic Asphalt might, with advantage, be introduced into Indian and other Eastern hospitals, barracks, and public buildings, as floors, flat roofing with skirting and angle fillets, damp-proof courses, vertical work with hot asphalt applied to walls, also for damp vertical walls where *Asphaltic Mastic plates* are fixed on the new system and afterwards jointed with hot liquid asphalt. Thus walls and foundations are made secure against dampness of any kind, because after its manipulation the Mastic Asphalt becomes impervious to air and water, resists fire, does not burn, repels vermin, checks vibration, and is a non-conductor, and should do much to arrest the ravages of rats and white ants and the destructive effects of rot in foundations. At a meeting of the Architectural Association of Ireland, Sir Charles Cameron, C.B., chief of the Public Health Department, said a quarter of an inch of asphalt was a better preventative of damp than six inches of ordinary concrete. The makers of Limmer Asphalt are the Limmer Asphalt Paving Company, of Moorgate-street, London, and they are doing a big lot of compressed asphalt pavement for the Corporation of Dublin; the company are also about to start an important contract in Portsmouth, while their work is equally well known in Belfast.

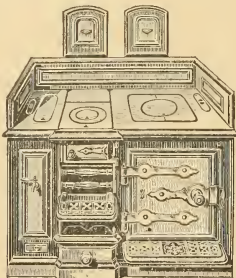


WARD & PARTNERS
 WORKERS IN STAINED & LEADED GLASS.
 ORIGINAL DESIGN & GOOD WORKMANSHIP.
 DESIGNS & ESTIMATES SUBMITTED. 12 QUEEN ST. BELFAST

BREVITIES.

Cathedral Windows.—The east window at Carlisle is said to be the best specimen of stained glass window. The exquisite tracery of this nine-light window is of matchless beauty. It is not quite so large as the east window at York Cathedral, which was erected in the reign of Henry IV., and is considered by many as equal to that in the cathedral at Carlisle, a most beautiful specimen of art, the work of John Thornton, of Coventry. The east window at Carlisle is embellished with nearly two hundred subjects from sacred history. The eastern window in York Cathedral is 75ft. in height and 32ft. in breadth. There are over 115 subjects represented, and nearly all the figures are about 2ft 2in. high. The east window at Hereford Cathedral is 40ft. high and 20ft. wide. It represents the Lord's Supper; the figures, painted by Mr. Backler, from West's celebrated picture, are 15ft. in height. The largest stained glass window in any English cathedral is the east window at Gloucester, 72ft. by 38ft., with its beautiful stained glass of 1350. In the opinion of Mr. Ruskin the west window of Dunblane Cathedral is the finest in the world. Salisbury Cathedral is noted both for the height of its spire and the number of its windows, there being the same number of windows as there are days in the year.

Messrs. Jones and Campbell, of Torwood Foundry, Larbert, send us a very handy little price list in the shape of a neatly bound leather pocket book. The get-up is capital, and the booklet is so easy of reference as to be very useful to all who want ranges or grates, etc. The firm manufactures a really capital line of these goods. We give an illustration of one of their best known kitchen ranges:—



The "Belle" self-setting range has become a special favourite among builders for use in the country, and wherever range-setting is effected with difficulty. The self-setting type gives less trouble, and is, besides, considerably cheaper than the larger variety of range.

The "Rosebery" Range is another handsome and popular example of the higher-class ranges. It was introduced by the firm in a self-setting form, in 1888, and at once proved itself worthy of the distinguished name it bears. This range is also made in the best style suitable for villas, and has been largely used by the builders of Glasgow, as well as by the City of Glasgow Corporation in their new model tenement buildings. It may be of interest also to mention that, previous to the Jameson Raid, a good trade was done with the "Rosebery" range in the Transvaal, and it was the first open and close range of a modern type and of British manufacture used at Johannesburg and Pretoria.

The Churchyard Lich-Gate.—The roofed entrance gate of an English churchyard is called a "Lich-gate," because it is a shed, or covered spot, designed to shelter the coffin and its bearers while waiting for the clergyman who is to conduct the procession to the church. The word "Lich" is derived from the Saxon "Lic," a dead body, the German being "Leich."

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent double-fronted Manchester stoves, with descending smoke flues, to the Fever Hospital, Birmingham.

The six most lofty structures in Europe are:—

1. Towers of Cologne Cathedral now ... 516ft. 9ins.
2. Towers of Rouen Cathedral ... 491ft. 8ins.
3. Tower of St. Nicholas at Hamburg ... 473ft. 1in.
4. Tower of Anvers Cathedral ... 472ft. 0ins.
5. Cupola of St. Peter's, Rome ... 469ft. 2ins.
6. Cathedral Spire at Strasburg ... 455ft. 2ins.

The six highest church (not cathedral) steeples in England appear to be:—

- | | | | |
|---------------------------|-----|-----|-----------|
| St. Walburg's, Preston | ... | ... | 303 feet. |
| St. Michael's, Coventry | ... | ... | 300 " |
| St. James's Church, Louth | ... | ... | 288 " |
| St. Wolfran's, Grantham | ... | ... | 273 " |
| St. Bodolph's, Boston | ... | ... | 272 " |
| St. Mary's, Redcliffe | ... | ... | 250 " |

According to To-Day, the Duke of Westminster is doing up Grosvenor House, Park-lane, in grand new style. Of most interest, however, is the original manor house of the valuable Grosvenor estate. This is an old red-brick house, faced by a small enclosed garden, which stands at a corner of Davies-street, Berkeley-square, and a mews, and is known as Bourdon House. Sir Thomas and Lady Grosvenor lived here during the session of Parliament which deposed James and elected William. The house has been carefully preserved.

A very ingenious device has been brought out by Messrs. Messer and Thorpe, in the shape of a patent bucket fire-extinguishing apparatus. It is simple and effective, because there is always ready a supply of water. The system is particularly suitable for either large or small buildings. The apparatus consists of a covered reservoir of water, in which is submerged one or more nests of buckets, which, filled with water, are ready for instant use.

A Joint Committee of Lords and Commons, sitting at Glasgow under the new Private Bill legislation for Scotland, passed the bill promoted by Mr. William M. Murphy, of Dublin, for a large scheme of electric tramways for Paisley and district, and rejected a bill promoted by the Paisley Corporation for a scheme covering part of the same ground.

Considering the wonderful cleanliness of the streets of Paris, it will come as a surprise to our local sanitary bodies to learn that a deputation from the Municipality of Paris has arrived in London for the purpose of visiting not only the Metropolis, but also Manchester, Bradford, and West Hartlepool, in order to examine the systems of dust destruction and street sanitation which exist in these towns.

The Boiling Test for Cement.—A writer in the *Engineering Record*, discussing the Michaelis boiling test for Portland cement, points out that in all kinds of testing of materials, the preparation of the specimen and the method of conducting the operation are as important in their influence on the result as the character of the test itself. This is conspicuously the case with tests of Portland cement. Michaelis has given very precise directions with this fact in view. He specified that a clear pat of Portland cement made up on filter paper on a glass plate, should be allowed to harden in air and in water 24 hours. At the end of this time, it was to be put into a vessel of water at normal temperature, which was to be brought slowly to the boiling point and kept at it for three hours. If the pat at the end of this time was firm and hard, and free from cracks, the cement was considered good; if not, it was rejected. This prescription conveys the principle. In carrying it out, there are some details to be considered. The pat should be made up in a clear paste, with 2 to 3 per cent. more water than is required for forming briquettes, and worked well for several minutes with a putty knife. The pat is to be thoroughly skaken and worked out on the glass, to get rid of air-bubbles, and then spread as a pat about 3 in. in diameter, $\frac{1}{2}$ in. thick in the middle, and drawn out fine at the edge. It should be put at once under a damp cloth or in moist air until hard set, then placed in water at normal temperature for 24 hours, and boiled as directed.

THE IRISH BUILDER.

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4s. per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly forward renewals to 11 Lower Sackville Street, Dublin. Subscribers can also assist by mentioning the paper, especially when corresponding with advertisers, and bring it under the notice of friends likely to subscribe.

VOL. XLIII.

MAY 23, 1901.

No. 993

The Electric Lighting Scheme.

THE Corporation of Dublin appears to think that, like that King of France, "they can do no wrong"—at least, if we are to take the attitude of an important section of that body in relation to the electric lighting of the city as a criterion of the views of the City Fathers.

The proposed scheme for lighting the city—depending upon a generating station at the Pigeon House Fort, three or four miles from the centre of the city, to light the utmost extremities of a "city" now stretching away beyond the sylvan beauties of the green lanes of Clontarf to the pastoral rustication of Dollymount—has been challenged root and branch—impugned, not by irresponsible nobodies, but by numbers of the most respected citizens and substantial ratepayers, who allege the scheme to be clumsy, hastily conceived, and extravagantly expensive, while respectable and eminent experts tell us it is impracticable. These people may be wrong—very wrong; but surely, if ever there were circumstances which warranted a full enquiry—if only to set at rest the fears of the citizens—the present case calls for such. Why, may we ask, if the promoters are so confident of their position, do they shrink from letting in the light of day on every nook and cranny of the ramifications of their intricate scheme? Why was one of the most representative deputations which ever approached the Corporation refused audience? Why has the scheme been so rushed forward that when the Local Government Board is in turn appealed to, the reply of that body is that that matter has now reached a stage beyond their control, and is in the hands of the Board of Works, who have now been approached, and asked to hold a full enquiry before finally sanctioning so vast an outlay? Meanwhile, the Corporation plunge madly ahead, accepting contracts based upon mutilated specifications and plans, without even awaiting the formality of the approval of the Board of Works. Can it be that the promoters are "riding for a fall"? Perhaps, perhaps not. Meanwhile, the able letter of "C.E.," which we publish, throws some light upon the present circumstances of this fateful project.

The Sanitary Law.

WHILE the papers are full of discussions as to whether the various corporate authorities—the Corporation of Dublin and the surrounding urban districts—are or are not doing their duty, we find those selfsame bodies daily violating the law by their conduct of the sanitary obligations laid upon all local authorities. In our next issue we shall give an extended report with authorities and notes of recent decisions specially prepared

for us by a well known Dublin Solicitor, of a case recently heard before Mr. Swift, K.C., Metropolitan Police Magistrate, which involves questions of such vast importance to property owners that we think it will be found of value to all connected with the management of house property. It raises points of law and equity never before, as far as we know, argued before the Irish courts. To take one point only in the case in question (the Pembroke Urban District Council v. Whitty), Mr. Johnston Roberts, who appeared for the defendant, Captain Whitty, elicited from the engineer to the township, that for years past the authorities had been enforcing the use of waterclosets and prohibiting the use of earth closets or privies, and people who did not comply with such requirements were summoned and penalised in money and in loss of time for insistence upon the statutory option which the legislature has expressly provided. Of course, no one well up in the Public Health Act could or would have submitted. But then, the vast majority of people, even lawyers, have never read, much less studied, that enactment, and, consequently, submit quietly to be victimized at the beck and whim of every inspector of nuisances; meanwhile, the provisions of the Act relating to cleansing and so forth are in whole or partial abeyance. Overcrowding does its work, and the authorities claim that they are enforcing the Acts of Parliament, and some of them clamour for more powers. Even the learned magistrate who gave this novel case a most careful and patient hearing on some half dozen different days, declared such orders relating to the enforced use of a water-carriage system, had always been granted in the Dublin Police Courts as a matter of course at the instance of the Sanitary Authorities.

PRESENTATION TO SIR THOMAS DREW, R.H.A.

On Wednesday evening the members of the Royal Institute of Architects of Ireland entertained the President, Sir Thomas Drew, R.H.A., at a dinner in the Central Hotel, Dublin. The chair was taken by Mr. J. Rawson Carroll, F.R.I.B.A. There were also present—Sir Thomas Drew, R.H.A.; Sir Charles Cameron, Messrs. G. C. Ashlin, R. M. Butler, F. A. Butler, Fredk. Bachelor, W. H. Beardwood, G. W. Crowe, Robert Cochrane, F. Franklin, Wm. J. Fennell, Wm. G. Gilliland, Charles Geoghegan, F. G. Hicks, Joseph Holloway, Richard Langrishe, W. M. Mitchell, C. A. Owen, R. Canfield Orpen, G. L. O'Connor, J. Howard Pentland, R. S. Swan, Robert J. Stirling, R. O'Brien Smythe, George P. Sheridan, W. Kaye Parry, Hon. Sec. After dinner the Chairman, on behalf of the members, presented to Sir Thomas Drew a gilt silver cup and cover, bearing the following inscription:—"From the members of the Royal Institute of the Architects of Ireland to their President, Sir Thomas Drew, as a mark of affectionate esteem on his receiving the honour of knighthood, Anno Domini, 1900." The cup is a copy of one made in the reign of Charles II., the original being in the possession of the Grocers' Company, one of the oldest of the Guilds in the City of London, and is known as the John Saunders Cup, after the donor. The form and outline of the cup are of great beauty, the bowl being supported on a bold baluster stem, resting on a well-proportioned foot, the whole being chased in bold repousse work and richly gilt. In the inside of the cup is a crown piece of the date of Sir Thomas's knighthood; in the foot a similar piece showing the effigy of her late Majesty Queen Victoria. An interesting feature of the presentation is that it embodied in the cup two other pieces of plate much valued by Sir Thomas—one a "Master Apostle's" spoon of the sixteenth century date, presented to him at his birth, and the other, set in the face of the cup, a medal of the Institute of Architects won by Sir Thom in his student days. The gathering was a remarkable testimony of the regard and esteem, one might say affection, in which Sir Thomas Drew is held by his professional brethren. It was also very gratifying to see that in whatever else our Dublin craftsmen may have lost their old-time cunning, the silversmiths are not unworthy successors of the designers and makers of the beautiful old Irish plate of the last century. The entire workmanship reflects the greatest credit on the makers, Messrs. West and Son, College-green, who carried it out in their Dublin factory.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.

VISIT TO CASTLETOWN.

On Saturday last the first of the Saturday afternoon summer visits began with a visit to princely Castletown. Castletown is distant about two miles from Celbridge Station, in the Co. Kildare. The afternoon was a most delightful one, and, reaching Castletown about 3.30, the members were well rewarded for their journey. Unquestionably by far the finest residence in Ireland, Castletown is amongst the best examples of that type of beautiful and delicate Georgian work which flourished so well in Ireland during the eighteenth century. A stately facade—the fenestration of which seems perfect—flanked by sweeping colonnades, gives promise of an interior which more than realises the promise of the exterior. Every room is delightful in proportion and detail. The members returned to town well pleased with this Saturday's outing. It is to be hoped another visit to Castletown may be arranged for a future date.

Castletown is the residence of Mr. Thomas Kelly, of New York, who has leased it from the representatives of the Connolly family. The late owner, Mr. Thomas Connolly, of the Scots Greys, was killed in South Africa last year. The Connollys were an old and historic family, who bore a prominent part in Ireland's history. Famed "Tom Connolly of Castletown" is doubtless familiar to readers of *Lever*. The town of Celbridge, which is built around the gates of Castletown, owes its foundation to the Limerick family, the former owners of the estate of Castletown, from whom William Connolly, Speaker of the Irish House of Commons, acquired it.

We hope to illustrate this fine house at an early date.

"IRISH MASONRY."—A NEW PUBLICATION.

We have received the first number of this new journal, intended to be the special organ of Irish Freemasons. In these days of specialist treatment of every question, opinion, or calling, religious, social, or technical, it is remarkable that so large and important a body as the Irish Masons should not have had a journal of their own; so it seems to us *Irish Masonry* fills a decided gap. To those of our readers who happen to be Masons we have little doubt the new venture will be welcome, and will meet with a hearty reception at their hands. The paper is brightly written, splendidly produced, and freely illustrated with portraits of prominent Freemasons. Under the able guidance of its editor, Mr. Ramsay Colles, F.R.H.S., we feel certain *Irish Masonry* has a big future before it. The current issue contains an interesting review by Mr. F. G. Hicks, Architect, of Leader Scott's "Cathedral Builders."

About Wooden Houses—As to both dryness and warmth a frame house properly boarded or plastered without and within, so as to leave air spaces between the inner and the outer layer, and so arranged that the air shall circulate freely under the floor, is far superior as a residence to an ordinary brick building, especially when this is arranged, as such buildings so often are, without any air spaces in the thickness of the walls or beneath the flooring. The only valid objections to such houses are fire and vermin. But as to spiders, the same applies to all cottage roofs; and as to fire, wooden houses have this great virtue that they are never high. A sitting-room on the ground floor and a chamber above is as high as any such houses are likely to go, and we venture to say—speaking, of course, only of isolated cottages in the country—that their inmates are in less danger from fire than those who dwell in tall brick houses, from which there is no escape except at the risk of a broken neck. No one would think of building a row of wooden houses or of using wood in towns where one fire might become the centre of a conflagration; but it does seem a pity, when the difficulty of finding healthy cottages is so great, that any obstacle should be placed in the way of inventors who, if the field were open, would doubtless be able to discover some cheaper way of building houses than by piling up ton after ton of absorbent bricks. Thickness of wall is nothing but a disadvantage when it is more or less saturated with moisture, which must be evaporated before the warmth of the sun can penetrate.—*The Hospital*.

OUR ILLUSTRATIONS.

ROYAL VICTORIA HOSPITAL, BELFAST.

The Wards from the South East.

The possibility of superseding the "Pavilion" arrangement of plan for hospitals has been discussed in consequence of the successful application of "Plenum" ventilation and the employment of antiseptic treatment. In the *Builder* of 8th August, 1896, appeared a letter from Mr. William Henman, F.R.I.B.A., advocating that hospitals and infirmaries should be considered "health manufactories," and that they should be planned and designed on the lines of a well-arranged manufactory in which the principal considerations are perfection of work and its accomplishment with ease and despatch; and, as the chief defects of "Pavilion" buildings of several storeys are the distances apart of the wards, the necessity for staircases and lifts, the excessive labour to the staff, and the difficulties of administration, he suggested it might be better to spread out the wards on one storey only, placing them side by side, and lighting them principally by continuous lantern lights.

The erection of a new hospital for Belfast having been rendered possible by means of a Jubilee fund, inaugurated by Mrs. Pirrie during the Lord Mayoralty of her husband, the Right Honourable W. J. Pirrie, the Committee visited many of the most recently-erected hospitals with the view to the selection of an architect of practical experience in hospital work. Their choice fell on Mr. Henman, the architect of the General Hospital, Birmingham, and he was requested to prepare a design upon the principles which he advocated in the letter above referred to. Sketch plans having been approved, the working drawings were prepared in conjunction with his partner, Mr. Thomas Cooper, and the contract was given last autumn to Messrs. McLaughlin and Harvey, builders, of Belfast and Dublin, who have already made good progress with the works, under the direction of Mr. G. S. Flower as clerk of works. Mr. W. H. Stephens, of 13, Donegall-square North, Belfast, is quantity surveyor.

The lamented death of Queen Victoria, to whose memory the hospital is dedicated, necessitated the foundation stone laying ceremony by the Prince and Princess of Wales on behalf of her Majesty, fixed for the 18th of April, 1901, being abandoned; but his Majesty the King has graciously expressed his desire to lay the foundation stone later on, so that Belfast will yet be honoured by a Royal visit for this purpose.

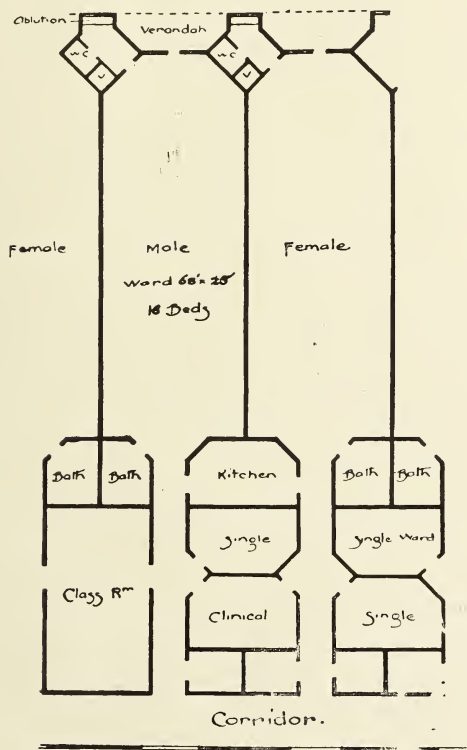
The accommodation in the new buildings will be for 300 patients, eight resident medical and surgical officers, 76 nurses, and 32 male and female attendants and servants. The principal entrance to the site of six acres in extent, liberally granted by the Corporation of Belfast, with the approval of the ratepayers, faces Grosvenor-street. The administrative buildings of four storeys and basement, in three separate buildings on the north side, provide a spacious entrance hall (above the porch of which is a statue of Queen Victoria), also accommodation for the resident staff, the nurses' home, the attendants' and servants' quarters, the dispensary, and the kitchen department. On the south side of a main corridor, running east and west, are the wards, side by side without intervening space, and practically under one roof. Each ward is for fourteen beds, eight being for medical, eight for surgical, and one for gynaecological cases, with their accessory rooms, approached by branch corridors. The wards are alternately arranged for male and female patients, each honorary physician and surgeon having control of two wards, one for each sex.

In connection with each group of four medical wards there are a large class-room and two clinical rooms, and to every pair of surgical wards there is an operating room. On the north side of the main corridor are the ophthalmic wards, two of six beds and two of two beds; also an operating room. Near to each of the seventeen large wards is a separation ward for two beds; a ward kitchen serves for each pair of wards, except for the gynaecological cases, where the department is self-contained, with separated operating room. Bath rooms and conveniences are attached to all the principal wards, and linen cupboards, and stores for patients' clothing

ROYAL VICTORIA HOSPITAL, BELFAST.

Unit of design of Wards.

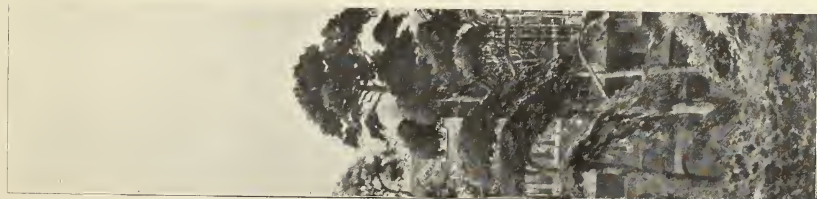
Henman & Cooper, Arch^{ts}



VIEW OF THE WARDS FROM THE SOUTH-EAST.

Architects—Wm. HENMAN AND THOS. COOPER, BIRMINGHAM.

Contractors—McLAUGHLIN & HARVEY, LTD., BELFAST.



THE LIBRARY

are provided. Two detached buildings are for isolation purposes, one being for six, the other for four beds, with kitchens, conveniences, and nurses' bedrooms. To each of the fourteen bed wards there is a large window at the south end, opening on to a balcony, and from which there is a view over park-like grounds to the hills beyond, and from end to end of the wards there are lantern lights, glazed on the slightly sloping sides; consequently, as the only lofty buildings are on the north, whatever sunlight there may be throughout the day is admitted to the wards, or may be regulated to requirements by the provision of green draw-down blinds. The compactness of the arrangement of wards not only simplifies administration and reduces labour to a minimum, but it lends itself to the "Plenum" system of ventilation more readily and with more certain results than with wards one above another in buildings of several storeys.

To the west of the administrative buildings is the out-patients' or "extern" department, consisting of a large waiting hall, with a number of medical and surgical consulting rooms around on the ground floor level, and in the basement there are retiring rooms for the use of students attending the hospital. The appliances for securing ventilation are in a separate building at the east end of the main corridor, connected with the hospital at the basement level by the principal air inlet duct, which is twenty feet high by nine feet wide at that end. The air intake building contains what may be regarded as the lungs of the hospital, because by means of the appliances there installed the whole of the fresh air supply is drawn in, filtered through moistened screens, warmed in cold weather, and forced on by means of powerful air-propellers in quantity sufficient to change the whole capacity of the hospital seven times per hour in winter and ten times per hour in summer without opening any windows. The appliances are all in duplicate, each of sufficient capacity or power to supply the minimum amount of air required, so that all necessary cleaning, rest, and repair of the machinery may take place without stopping the air supply.

The knowledge and experience which the architects have acquired of "Plenum" ventilation have enabled them, in conjunction with Mr. Henry Lea, the consulting engineer, to adopt improved appliances and to simplify and cheapen the cost of maintaining their efficiency; and by utilising the exhaust steam from the engines in securing the necessary supply of hot water throughout the establishment, it is estimated that very little additional cost will be incurred for a system of ventilation far more efficient than can be obtained by the ordinary methods, which depend so much on the varying force of the wind and the ever-changing state of the outer atmosphere. The decided advantages of the "Plenum" system of ventilation are—an equable temperature and the continual change of air throughout every portion of the building, without draughts, and, as there are no fire-places or heating appliances in the wards, noise and dirt caused by making up fires and conveying coal about are entirely avoided. There will be a complete steam laundry in a detached building on the premises, together with disinfecting apparatus and a destructor.

The buildings will be unique in their external simplicity, as well as their internal arrangements, but their size and the care that has been exercised in the selection of the stone to be used, combined with specially manufactured sand-faced bricks of good red colour, will, it is hoped, make the Royal Victoria Hospital, even in its architectural aspect, an acquisition to Belfast. The completeness of the arrangements and fittings of the buildings are, however, the points upon which the Committee have most strongly insisted, so that the expenditure may be fully employed for the relief of pain among the poorer classes of the community. In fact, the cost per patient's bed will not exceed £300, an exceedingly low figure for such a complete and up-to-date hospital.

In our last issue we published a general view of the Administrative and the Extern Departments, and we now have pleasure in giving our readers a perspective of the wards as they will appear from the south-east, together with an enlarged outline plan shewing unit of design of wards.

LAW CASES.

CONTRACTORS' CLAIM AGAINST COUNTY COUNCIL.

On Saturday, in the King's Bench Division, Court No. 2, before Mr. Justice Kenny, Mr. Greor (instructed by Mr. James P. Hamilton) applied in a case of Messrs. H. and J. Martin, Limited, against the County Council of Antrim, for an order for discovery of documents by the plaintiffs, who seek to recover a sum of £4,655 alleged to be due in respect of the building of the new County Antrim Asylum. Counsel said there was a defence to the action, which set out that the defendants were entitled to retentions in respect of certain sums, and that these retentions amounted altogether to more than the sum claimed by the plaintiffs. The Court made the order.

TIPPERARY COUNTY COUNCIL.

On Saturday, in King's Bench Division No. 1, Mr. Jefferson (instructed by Mr. R. F. Barry) applied on behalf of Michael George Head, Assistant County Surveyor for the North Riding of Tipperary, for a conditional order for *mandamus* to compel the County County Council for that division of the county to entertain his application for compensation. He had been dismissed by the County Council, and was at present in South Africa. The Court granted a conditional order.

NEW BOOKS.

THE WORKMEN'S COMPENSATION ACT, 1897: A Plea for Revision. By R. T. Thomson; price, 2s. 6d. nett. London: Eifingham Wilson, 11 Royal Exchange. 1901.

"MODERN OPERA HOUSES AND THEATRES."

Mr. B. T. Batsford much regrets to announce that the second issue of Mr. Edwin O. Sachs's monumental work, "Modern Opera Houses and Theatres," promised for the opening of the Opera season, has been unavoidably delayed by the illness of the author. It is now scarcely probable that Mr. Sachs's work can be re-issued before the autumn.

The largest search-light ever constructed was made by the General Electric Company of New York. The lens-reflector is 5 ft. in diameter, and, being of the concave spherical type of Mangin, gives a beam of parallel rays. The carbons of the arc are $1\frac{1}{2}$ in. to $1\frac{3}{4}$ in. thick and coated with copper. The positive or upper carbon is placed a little in front of the other, and the intense light of the crater is cast on the reflector. The maximum current required is 200 amperes, and the arc has a luminous intensity of 90,000 to 100,000 candles. The reflected beam has a total intensity of 375,000,000 candles. The great search-light at the Chicago Exhibition, and subsequently on Mount Lowe, California, was of 3,000,000 candle-power, could be seen 150 miles, and by its light at a distance of thirty-five miles a newspaper could be read.

The following are a few Contracts just secured in public competition by Messrs. Goodall, Lamb, and Heighway, Ltd.:—The woodwork in connection with the extension of Smedley's Hydro, Matlock Bridge, Derbyshire; 7 shop fronts, &c. The Richmond Cavendish Company, Ltd., boardroom panellings and fittings, Liverpool; John Clarke, architect; £900. The Mercantile Bank, Stockport Branch; Messrs. Booth and Chadwick, architects, Manchester; £265. The Lancashire and Yorkshire Bank, Oldham-street; W. J. Morley, Esq., architect, Bradford; £399. The York City and Midland Bank, Shildon, Durham; Messrs. Demaine and Brierly, architects, York, £568. Dublin County Council Offices, boardroom fittings and parquet, £660. The Old Bull Hotel, Blackburn; Messrs. Stones and Stones, architects, Blackburn; the Old English Room, Spanish Room, entrance hall, and staircase; £1,051 5s. 9d. The firm also secured the contract for the Queensland Government to execute the whole of their court obelisks and show cases at the GLASGOW INTERNATIONAL EXHIBITION, amounting to about £2,000; Charles Berry, Esq., architect.

SPECIFICATION.

**The Alexandra Nurses Home, Curragh Camp.
Carpenter and Joiner.**

(Continued.)

To be 1" deal, ledged and braced, 2'-7" wide

Door to Coals. and 4 feet high, hung with 18" cross grained hinges, and secured with 6" bright rod bolts on the outside.

The frame to be fir, 4' x 3', the lower portion of the door-opening to have movable slides of 1½" deal, rebated on both edges (excepting the top and bottom width, which will be rebated on one edge only), in three 9" widths, made to slide in groove between posts, formed with ½" x 1" wrought and beaded fillet, the rebate for door above to be formed with similar fillet.

Jambs and Soffits, and Finishing to Internal Doors. All internal doors, except where otherwise described, to have 2" deal, wrought, framed, and rebated jambs and soffits; finished on both sides, where in plastered walls, with ¾" x 6" deal, wrought, splayed, and framed grounds, plugged to wall, and 1" x 3" deal moulding mitred as architrave.

The linings to sittingroom and waitingroom to be double rebated.

Frames for Louvred Ventilators. To be 1½" deal x 4½" wide, wrought and framed, and finished on the face with 1½" x 1" deal moulding splayed to key, plaster and mitred at angles.

Fittings.

The whole of the fittings to be properly wrought and framed, ploughed and tongued, chamfered or beaded, glued and blocked, as may be required.

Where the ends of shelves abut against wall, &c., they are to be supported by chamfered deal fillets, 2½ in. x 1 in., plugged to wall.

Uprights and Louvres to benches and shelves are not to exceed 4 feet apart.

Sitting-room. Holland window blind of approved pattern, properly hemmed for lath, and fitted to 1½ in. deal octagonal roller, with Paragon mounting and feather-edged blind lath.—3.

Louvred ventilators for admission of fresh air, 7½ in. x 5½ in., with galvanised cast-iron hinged grating and frame, 9 in. x 3 in.—2.

Cupboard in recess to be 4ft. 4 in. long, 1 ft. 2 in. deep, and 3 feet high, the top to be 1 in. Honduras mahogany, moulded on front edge with ½ in. mahogany skirting at back and ends, mitred at angles, and 4½ in. high, the top edge mounted, and the bottom edge tongued to top, the ends of skirting to be O.G. shaped.—1.

The front to have 1½ in. deal framing, 3 in. wide, wrought, framed and bladed, and 1½ in. deal framed one-panel doors, square and flat, moulded on outside and hung folding, each fold with one pair of 2 in. brass butts, and secured with a 3 in. brass cupboard lock, 2-in. brass cable hook, and a brass cupboard turn with 1½ in. knob.

The cupboard to have two shelves of 1 inch deal, supported at ends with fillets plugged to wall.

The mahogany to be French polished, and all exposed parts of the deal, including the shelf edge, to be painted four coats in oil common colour.

Hall. Honduras mahogany moulded pin rail, 1 in. thick, 1½ ins. wide, and 4 feet long, plugged to wall, and fitted with No. 6 strong brass hat and cloak hooks.—1.

The rail to have proper returned ends, and to be French polished.

Waiting Room. Provide and fix window blinds as before described,

Louvred ventilator, 7½ in. x 5½ in., and C. I. hinged grating as before described.

Provide and fix bench on one side of room, with shelves over, as shown on plan.

The top to be 1½ in. deal, 1 foot 6 inches wide, wrought both sides, and ploughed and tongued, with front edge rounded, supported on 3 in. and 2 in. uprights and bearers, framed and tenoned into door and pinned to wall.

The shelves to be 1 in. deal, wrought both sides, with rounded edge, supported at ends with deal fillets plugged to wall, and

intermediately with cast iron brackets, about 4 feet apart, fixed with screws, and two plugs in wall.

The bottom shelf to be 11 in. wide, and to have brackets 9 in. x 9 in., and the top shelf to be 9 in. wide, and to have brackets 7 in. x 7 in.

Kitchen Provide and fix at end of kitchen, where shown on plan, 1½ in. deal bench, two feet wide, wrought both sides, ploughed and tongued, and with rounded edge, the bench to be supported on 3 in. x 2 in. deal, wrought, and framed uprights and bearers, about 4 feet apart.

Form dresser at one end of bench, where shown, with two drawers and pot board underneath, and three tiers of shelves above, with shaped ends.

The drawers to have 1 in. deal fronts, and ¾ in. risers, properly dovetailed, ¾ in. ploughed and tongued, bottom grooved to sides and front, proper runners, and two 2 in. hard wood knobs to each drawer.

The pot board to be 1 in. deal, wrought one side, on proper 3 in. x 2 in. bearers, ¾ in. riser and ¾ in. skirting at back and end, 4½ in. high, chamfered on top edge.

The shelves to be 1 in. deal, 7 in. wide, framed into uprights at ends of 1½ in. deal, and scalloped on edge.

The back of dresser to be ¾ in. wrought and matched deal boarding.

Each shelf to have a C.I. bracket as a support in the centre, weighing about 3 lbs. each, and fixed with screws.

The top to have 3 in. deal moulded capping, mitred and returned on end.

Provide and fix in shelves three dozen cup hooks, of sizes.

Provide and fix a plate rack over bench where shown, 3ft. 0 in. x 1 ft. 1 in., and 3 ft. 4 in. high, all of deal, wrought, framed and beaded, divided into compartments.

Top and middle rail, also uprights, to be 1½ in. x 1½ in., bottom rail 2 in. x 1½ in. The ends to be open.

The rods to be ¾ in. and ½ in. diameter respectively, housed into rails.

The plate rack to be supported on No. 2 galvanized cast iron brackets, each weighing about 3 lbs., fixed to wood plugs, and the top to be screwed to wall by No. 2 galvanized wrought iron holdfasts, driven into wall and screwed to top rail.

A towel roller of beech, 2 in. diameter, with oak brackets, 1 in. thick and 8 in. high, perforated for pin, cut and shaped, to be fixed at back of door.

Provide and fix window blinds as before described.—2.

Provide and fix lowered ventilators, 7½ in. x 5½ in., and C. I. hinged grating, 9 in. x 3 in.—2.

Pantry. Provide and fix where shown 1½ in. deal bench, 1 ft 6 in. wide, with return 11 in. wide, supported on deal fillets at ends plugged to wall. The narrow shelf to be ship-lapped to bench.

Fix two tiers of 1 in. shelves along side wall, supported on deal fillets at ends and a C.I. bracket to the centre of each shelf.

The shelves and bench to have front edge rounded, and to have ¾ in. deal chamfered skirting, 4½ in. high, fixed at back and ends of each shelf and bench.

Larder. Provide and fix 1 in. slate shelves at end and side of larder, as shown on plan, the shelf at end to be 18 in. wide, and that at side 12 in. wide, to be rubbed on top, with rounded edge, and supported at ends on deal fillets plugged to wall and a C.I. bracket 9 in. x 9 in. under end of side shelf.

The shelves to be flushed in to the walls with cement.

Provide and fix fir meat rail, 3 in. x 2 in., wrought all round and rounded on top edge, pinned into wall at each end in cement, and provided with four 4 in. wrought-iron tinned meat hooks.

Provide and fix in external walls where directed a louvred ventilator and grating, as before described.

Bedrooms. Each room to have a louvred ventilator and grating for admission of fresh air, as before described, fixed as may be directed.

Each room to be provided with a deal cupboard wardrobe, 4 ft. 6 in. long, 7 feet high, and 1 ft. 2 in. deep, in clear.

The sides, top and bottom shelf, to be 1 in. ploughed and tongued, framed and grooved, as required.

(To be continued.)

MINTON'S TILES.

BY APPOINTMENT.

BY APPOINTMENT.



MINTON, HOLLINS & CO., Patent Tile Works, STOKE-UPON-TRENT.

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NOTES ON ROAD CONSTRUCTION.

(A paper read before the Institution of Civil Engineers of Ireland, by Mr. R. G. Allanson-Winn, on the 15th May, 1901. The President, Mr. Glover, in the Chair.)

The primary intention of those constructing roads, whether mule tracks, baggage animal tracks, or full-sized Macadamised roads for general traffic, has always been to provide an easier and quicker means of communication between two places than the natural conformation of the ground affords. Thus, if A and B are two towns they may be five miles or 100 miles apart, their difference in level may be five feet or 5,000 feet, the object—having due regard to the kind of traffic which will use the road—is to make the transit from one to the other easier, quicker, and safer.

How often have the most important conditions being lost sight of altogether, either through undue haste in settling upon the alignment, or ignorance of the best gradients to take, or where to save distance by judicious cutting! Monuments of such faulty alignments exist all over the country.

A Story.

There is a story told of one of the Eastern magnates who employed an European engineer to make a road from an important town at the foot of a range of mountains over a lofty pass, and then on to another town some miles away in the plain at the other side of the range. The engineer pegged out his zigzag up to the pass, and then down the other side, taking a gradient in both cases well suited to the expected traffic. He then, as there were no obstacles of any kind, took a perfectly straight line from the point of leaving the foot of the mountains to the town to be reached. In this he was quite correct, but the potentate who came to inspect the work was much displeased, and said the straight line was not pretty, and that he insisted upon having the road zigzagged across the plain so as to be in harmony with the zigzags over the mountain range!

Gradient.

As a much steeper gradient may be allowed for a bridle-path or pack-horse track than for a tonga or carriage road, the actual distance of the first-named will be shorter than the others. On an ordinary road, what we call a level road across flat or gently undulating country, about 1 in 35 or 151 feet per mile, is about the steepest slope allowable for trotting horses. In crossing mountain passes, however, much steeper gradients are often necessary, and 3° to 5° may be occasionally used, though 2° 5' should not be exceeded except when absolutely necessary to save cost. That is to say, a rise of about $4\frac{1}{2}$ feet in 100 feet should be looked upon as a safe limit for a mountain road. Reference may be made to Trautwines' table of grades per mile and per 100 feet, measured horizontally, and corresponding to different angles of inclination.

There are two or three points of especial importance outside all technicalities. All engaged upon the work, or in any way interested, should be quite clear as to what is expected of the road, and what is the primary object in ordering its construction.

Mountain Roads.

It may be that you have to run a mountain road over high passes as quickly as possible, and that such road is intended to expedite the carriage of munitions of war. In such a case there is probably no time in which to decide upon the very best possible alignment. You fix upon one which seems fairly good, and with clinometer in your hand and a couple of assistants with staves, you run out several miles a day—many hundreds of coolies or navvies cutting out the road as you go along. Long distances on the Gilgit strategic road were thus constructed by the contractors, Messrs. Spedding and Co., at the time of the Hunza-Naga campaign.

On the other hand, you may have to lay out a very good permanent road, which is to open up a country and facilitate the transport of produce, and so increase the commercial prosperity.

In a country of rivers, dykes, and swamps, too much care cannot be taken in the selection of bridge sites, and it would be well, therefore, having first roughly made out the approximate direction the road should take, to select all important

bridge sites with the view of securing safe approaches, good foundations for abutments and piers, and an economy, if possible, in cost. Indeed, it is hardly going too far to say that economy is certain to be effected in the long run if all these matters are earnestly considered before the line is finally pegged out.

Careful borings should be made wherever abutments and piers have to be erected. The initial expense of all these precautions is more than repaid by increase of safety and the practical certainty that alterations will not be required in the future.

Waterway.

Then, again, in the question of waterway; it is most unwise to try to economise bricks and mortar by constructing a bridge inadequate to the requirements of the highest floods. Possibly in certain situations the difference in expense between a brick structure with piers and a good iron girder bridge may be rather heavy, but if you place your girder well above the reach of the highest floods, and look well to the abutments, you will, in the case of a single span, be pretty secure.

Another danger to be guarded against in masonry bridges or culverts is the use of flat arches, where the abutments are high, for if you persist in having the flat arch you must increase the weight of your abutments, and thus add unnecessarily to the expense of the masonry, or else run the chance of the arch giving way. Where culverts are required in low banks 5 to 6 feet in height 60 degs. arches may be allowable, in spans from 4 to 10 feet, but where the banks are higher the author has found it safer to use true arches. In two instances he has observed failure to result from the use of 60 degs. arches in 10 foot banks with 10 foot spans.

Piers.

Another important point in masonry bridges is the avoidance of heavy, thick piers, which not only waste money in bricks and mortar, but take up the waterway and add to the chances of damage by floods scouring the abutments. As the piers do not take any lateral thrust, and simply carry the vertical pressure of the arches, they should present as slight a surface as possible (compatible with strength) to the flowing stream. The abutments should be of full weight and be well tucked into the banks, so as to avoid scour and obstruction.

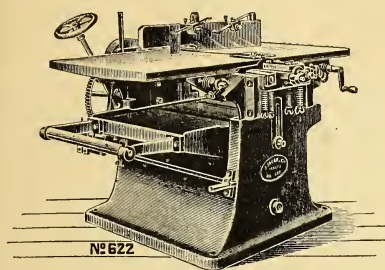
A waste of material is often observed in piers, but really, where flat arches are used, the generosity would be better bestowed upon the abutments, which take the thrust of the arches at both banks.

Specifications.

One of the most important matters to be settled before commencing work is an exact specification of what is required. As a rule—it is a rule which has many exceptions—a contractor is expected to put in good, sound, first-class work, both as regards quality of materials and manner of construction. He is then expected to do the work as cheaply as is consistent with allowing him a fair profit on his outlay and risks; and lastly, he should, both in his own and in his employer's interests, try to complete his work rapidly. All this probably applies to the vast majority of works given out on contract, but it often happens that a contractor is asked to run a passable road over such-and-such a range of hills with all possible dispatch. Here time is of the first importance; first-class work and cheapness come in a very bad second and third. For example, it may be of the utmost importance, and involve the saving of thousands of pounds or lakhs of rupees, to get certain troops, provisions or ammunition over a trackless range of mountains before a certain date. The lives of hundreds of fellow-creatures depend, perhaps, on the result; the contractor's terms are high, and his risks are great, but, when he has carried out the work and the road has fulfilled its functions, all parties are satisfied. The quickly built road and temporary bridges will, by the next year, require a very great deal of repair, but they have done the work specified.

Cost.

In the case of a first-class metalled carriage road good rates are sure to be paid, and time of completion will probably be of secondary consideration. All the work from the construc-



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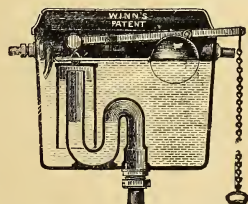
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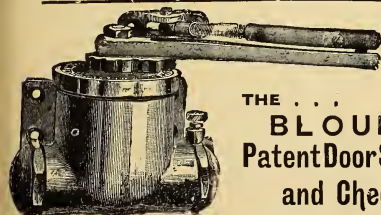
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tion of banks and other earthwork, such as slopes of cuttings, side drains, &c., with the quality of the materials used, should be according to specification. Where cheapness is the first desideratum, nothing but unsatisfactory work can be expected. Monuments of mistaken economy are to be found all along a road constructed on these terms—faulty bridge approaches, uneven surfaces, cracked arches, and bulging abutments. Of course a good road may also happen to be a cheap one, but a road in which every important detail has been scamped for the sake of saving money cannot be a good one. With the view of keeping questions relating to the same subject as far as possible under one heading, it has seemed advisable to give certain specifications as regards materials and construction which have been laid down for the author's guidance in work under his charge. These directions, as they may very properly be termed, or some of them, may be found useful for reference during the construction of almost any road.

Earth to be taken from borrow pits on either side of road and laid in even layers 1 foot high.

Slopes 1 and 2 or 1 in 3 according to sections. Between chain — and chain — allowance of 1 inch per 1 foot extra, height must be also added to allow for subsidence.

Between chain — and chain — in the marshy land 2 inches per 1 foot is to be allowed.

Surface of road to be nicely dressed to template, rising 4 inches to 6 inches to formation level in centre.

Sides to be neatly dressed off to required slopes.

Cuttings.—To be cleanly cut according to plan, and sides dressed to required slopes.

Side Drains.—These are to be cleanly cut, in all level portions, and in cuttings, parallel to, and at equal distances right and left of, the centre line of the road, 2 feet wide at top, 1 foot at bottom, and 1 foot 6 inches deep.

Catchwater Drains.—To be cleanly cut out at such places as may from time to time be indicated during the progress of the work.

Masonry.

Bricks.—9 inches by 4½ inches by 3 inches, about 14 to the cubic foot or 1,400 to the 100 cubic foot.

All bricks to be well moulded and well burnt, and to pass as "first-class."

Mortar.—Lime, surkhi and sand to be all of first quality, and sifted fine before being mixed. Mortar to be ground in a mill before being used in masonry. Turning it over with spades is not sufficient. Proportions:—1 part lime, 1 part sand; or, where the lime is "fat" and slow setting, 2 parts lime, 2 parts surkhi, 1 part sand; or 2 parts lime, 3 parts surkhi.

N.B.—Surkhi to be made of well-burnt clay or well-burnt bricks—under-burnt clay is little better than mud. It should be sharp and clean, and leave no dirt on the hands when rubbed between the fingers. Sand to be also clean and sharp.

Concrete.—Any stone, clinker, or kunka may be used: it must be broken into small nodules 2 inches to 2½ inches in greatest diameters. The concrete to be well mixed with the mortar before being used, it should be laid in the founds or elsewhere in layers of 7 inches and rammed with rammers to 6 inches. Plenty of mortar to be used and the surface to show mortar evenly on top when finished.

Stone Masonry.—It often happens that in large towns and manufacturing districts where a great deal of coal is used much care has to be devoted to the selection of the suitable kind of stone, and old buildings should be examined for signs of weathering; it should then be ascertained, if possible, from which quarries the weathered stone was taken, in order that that particular stage may be avoided in the works about to be commenced. As we are, however, dealing more particularly with country roads, the question of the chemical action of certain gases, carbonic acid, nitric acid, etc., on stone surfaces is not likely to arise, and those who wish to study this question are referred to Mr. Dobson's manuals in Weale's series. There are, however, certain stones of porous flaking character which are always apt to weather badly, through the absorption of moisture and the action of frosts. These should, if possible, be avoided in all exposed work.

(To be continued.)

ENGINEERING NEWS.

BIRR AND PORTUMNA RAILWAY.

In the House of Commons Mr. Wyndham, replying to Mr. Roche, said the cost of construction of this line was about £80,000. The Great Southern and Western Company worked the line for ten years, and when their lease expired in 1878 they surrendered the line, which then fell into the hands of the Public Works Loans Commissioners as first mortgagees. The rails, &c., were carried away by irresponsible persons.

The Church of the Sacré Cœur, Paris.—The work for the completion of the basilica of the Sacré Cœur at Montmartre is now being rapidly pushed on under the direction of the architect, M. Rauline. Two wells, 110 feet deep, have just been completed for the foundation of a belfry. The electric lighting installation is being prepared for the crypt and the church. The sculptor, M. Fagel, is putting the finishing touches to the decoration of the chapel dedicated to the Army. In each metope are finely sculptured military scenes, and groups of soldiers representing various arms; on either side of the chapel are figures of Saints Maurice and George, the patron saints of the Army. The decoration of the other chapels dedicated to the Navy, Agriculture, Commerce, Industry, and Medicine, will shortly be put in hand. The restoration of the old Roman church of Saint Pierre, close under the basilica, is rapidly proceeding.—*Builder.*

The effect of the weather on the strength of iron.—Iron, while in a perfect state of preservation, is not affected as regards its strength, but under certain circumstances becomes stronger and more tenacious. It has been proved by experiments that magnetism has the power of protecting iron from corrosion, and by this influence the rails in use on railways are protected from rust. If not properly cared for in the way of scraping, oiling, polishing, or painting there is no doubt iron will be seriously injured and weakened by rust; it therefore loses in substance. But, bulk for bulk, as long as it is preserved from rust, it retains its original strength.

A Hundred Years of Architecture in London.

The *Star* publishes the following useful list of public buildings erected in London since the year 1800:—Houses of Parliament, 1852; Law Courts, Strand, 1881; Imperial Institute, Kensington, May, 1893; Royal Exchange, opened by the Queen, October, 1844; The Mint, 1811; The Custom House, 1817; Southwark Bridge, 1819; London Bridge, August, 1831; Blackfriars Bridge, opened by the Queen, November 6, 1869; Westminster Bridge, commenced in August, 1853, but, owing to failure of the contractor, completed on May 24, 1862; Waterloo Bridge, opened on the anniversary of the battle, June 18, 1817; Bank of England, completed by Sir John Soane, 1821; all the London railway stations have been built since 1800; Pentonville Prison, most conspicuous landmark in North London, opened 1842; Holloway Castle (late Norman period), opened February 6, 1852; Smithfield Meat Market, opened December 1, 1868; Columbia Market, Bethnal Green (which looks like a cathedral), built by Baroness Burdett-Coutts, April 28, 1869; Crystal Palace, most conspicuous object in South London, removed there from the Great Exhibition in Hyde Park, and opened by the Queen July, 1854; South Kensington Museum, opened June 22, 1857; New Roman Catholic Cathedral of Westminster, now approaching completion; St. Thomas's Hospital, facing Houses of Parliament, opened by the Queen June 21, 1871; Covent Garden Market buildings, 1830; People's Palace, Mile End-road, opened by the Queen May 14, 1887; City Temple, opened on Holborn Viaduct, to replace the old Poultry chapel, May 19, 1874. This list, of course, does not profess to be exhaustive; it simply indicates those buildings which from their height, architecture, detached situation, or special national importance are specially prominent.

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Mr. James Melling, Dashwood House, New Broadstreet, E.C., is the inventor of a very important novelty in the shape of radiators—the Dowsing radiator. These are luminous radiators which radiate intense heat into the room, but with this valuable reservation—that no combustion and injurious gases or fumes are given off, and that, therefore, they do not require a flue. The heat is available as soon as the current is turned on. The electricity is all turned to heat, and the effect is certainly that of the glow and light of sunshine itself. But the mode by which this is effected is worthy of notice. The radiators are exceedingly ornamental appliances, and consist in each case of a series of heat-lamps. In one of these radiators four heat-lamps are arranged in a fan-like or radiating form in an ornamental metal case or frame and patent copper reflector, which is sufficient to warm rooms of about 12ft. square. One radiator shown is of square type, coppered all over except back. It has brass pillars and ornaments, and contains four luminous heat-lamps, two switches, and three yards of flexible wire. A four-lamp radiator consumes one unit of electricity per hour; but it may be turned down to one-half by the switches. These very attractive-looking electric-lamp radiators can be worked from any electric supply main, if the heat-lamps are fitted for the voltage with proper-size wires. For halls, bedrooms, and wherever a portable radiator is required, this pure-air radiator ought to be used.

The Strike in the Slate Quarries.—A CHANCE FOR BETHESDA MEN.—Much interest is being taken by those who have at heart the interests of the Penrhyn quarrymen in an extensive emigration scheme which has been placed before them. The determination of the men not to return to the quarries under similar conditions to the past, and the firm attitude of Lord Penrhyn makes it evident that the resumption of operations will be indefinitely delayed. Efforts are therefore being made to induce them to emigrate to Sault Sainte Marie, in the Province of Ontario, where Mr. Clergue, a rich American, has discovered and developed large deposits of iron ore and nickel.

BUILDING NEWS.

Broomfield.—ST. PATRICK'S NEW CHURCH, BROOMFIELD (Co. MONAHAN).—This church is now practically finished. The dedication has been fixed for September 15th next. Mr. G. L. O'Connor, Dublin, is the architect, and Mr. Wynn, Dundalk, the builder.

Curragh Camp.—New business premises for Messrs. McCabe & Co., of the South City Markets, are about to be erected. The proposed site is opposite the Water Tower. Mr. R. M. Butler, of Dublin, is the architect.

Tullamore.—Twenty-one labourers' cottages are about to be erected. The Provisional Order has been made.

The old Martello Tower at Seapoint, Dublin Bay, was recently advertised for sale with the land attached thereto, by order of the Secretary of State for War. The tower was built during the Napoleonic invasion scare for the protection of the southern shores of Dublin Bay, and armed with a 40-pounder traversing gun, mounted on the boom-proof roof.

An Architect's Escape.—Can a railway guard be compelled by passengers to wear gloves? A squeamish architect, who lately travelled in the Dieppe to Paris express considers that the answer is in the affirmative. The Paris Courts, however, have decided otherwise. On the occasion referred to the gentleman was asked for his ticket by the guard, who wished to punch a hole in it. He was just going to comply, when a look of horror came over his face. "Where are your gloves?" he exclaimed, in a shocked tone. He would have added that the guard's hands were not immaculate, had his true inborn politeness not restrained him from making so rude a remark. But the railway official, apparently unmoved by the delicate regard for his feelings shown by the passenger, bluntly replied that he had not any gloves, that he was not going to get any, and that his bare hands were good enough for the likes of the architect. The latter after this declined either to continue the conversation or to give up his ticket until the guard should have put gloves on. In Court the architect explained his case in the politest but firmest way possible. He considered, as a matter of principle, that railway guards should wear gloves. At this rate travelling will be an expensive amusement for the architect, the result of his first attempt to defend his principle being a fine of £4.—*Telegraph.*

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No. 994—Vol. XLIII

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TOPICAL TOUCHES.

A FRAGMENT OF THE "CHRONICLES OF THE CITY OF DUBLIN."

which was discovered engraved, in so-called Celtic characters, on brazen tablets. These tablets had been deposited in an ancient Roman urn, apparently for safety. This urn was found on what is popularly supposed to have been the site of the Meeting House of the Elders at the time (1911 B.C.); that the inhabitants, goaded to frenzy by the ever-increasing burdens laid upon their shoulders, and their inability, in consequence, to either live themselves or succour their children, rose up in their wrath and slew the Elders, and razed their meeting place to the ground, leaving not one stone of the noble pile to mark where it originally stood; and afterwards they destroyed the houses and all that had belonged to the Elders. And thereupon the King did send three of his officers to rule over that city, and apparently the inhabitants were well content with their rule, as seen by the ancient records of that time:—

And it came to pass, that the inhabitants of the City communed together, and said: Our elders shall be elected by us and rule over us, each his own quarter, and together they shall form themselves into a body, and shall administer our City and make our burdens light upon our shoulders; and the elders laughed in their robes. Now these elders had one Tim as governor: and Tim possessed much ambition and little gold, but great knowledge, being a Sanhedrim learned in the law. Now these elders, being bound by their oaths to direct the issues of the City so as to bring the caravans and merchants from afar, that the City and the inhabitants thereof should wax fat from the profits of their merchandise, did enter upon many devices whereby the inhabitants should be made glad, and the City become prosperous in the land: and, to this end, they did devise many schemes: and the inhabitants did shout with joy. But their Council said, We cannot do this thing for ye without shekels, therefore give us them in abundance. And the inhabitants said, Make it a law, and we will give each out of our wealth. And the elders made it a law, and the inhabitants gave each out of his abundance; and there were some that murmured, but the others said, "Go to, thou niggards," and the law stood. And many laws of a like nature were made by their rulers, and the inhabitants paid each as he was recorded by the servants of the rulers, and the rulers waxed prosperous; but the merchants and the inhabitants of that City cried out sore, for their burdens were grievous to bear; and they cried out, "Release us therefrom, or we and our City die." But their rulers said, "Nay, for ye know not what is good for you," And amongst their rulers there arose one Thomas, and he said, "I will relieve y^r burden, and bring joy to your hearts, for I shall erect lofty Pharos throughout your City, and spread light around, so that ye shall not know when the day ceaseth and night cometh, and ye all can work as if the Lord gave you two days for one, and ye shall increase your wealth and lengthen your days, by adding the hours of darkness thereto." And the people shouted, with a great and mighty shout, "Go and prosper." And Thomas bowed his head, lest they should see the smile that lit his countenance. Now, Thomas was a wise man, and he arose in the morn-

ing, and journeyed into a far country, where dwelt a man of mystery, and his name was Rufus, and he was earned (so he said) in all that obtaineth towards light. And Thomas came unto him and said, "Oh! Rufus, the citizens of my land are blind, and I have promised them light, help thou me." And, Rufus said, "I know thy city and the inhabitants thereof, for I have sojourned there in my youth, before I made myself a prophet in my own land, and I will do this thing for thee." And they both looked unto each other and smiled. Now, Rufus being a man adverse to travel, said, "If I leave mine own land and do this thing, the burden will be heavy upon me, and who shall recompense me?" And Thomas answered unto him, "I shall make thee a god amongst the people, and they will provide for thee." And, so Rufus returned with Thomas and the people did acclaim him. Now Rufus spake unto the people, and did charm their senses, promising them vain things. And they cried with one accord, "Give us light;" and he said, "Ye shall have it, but the materials thereof are costly, and I must not be disturbed whilst I am mingling them." And, they said, "Take all we have;" and Thomas and Rufus smiled; and Rufus began his incantations.

Now, amongst the people of that city were a great number of those slaves who had built the structures thereof and then had been freed—to die, or live on the rich man's charity—and they had congregated together in the ruins of the houses where in ancient times the lordly ones of the city had had their dwellings, and, in them they bred pestilence, and they died like the flies in the east wind; but the pestilence stalked abroad over the city: and men were afraid and began to say what is this thing that is in our midst? And the slaves cried out, "Help us or we die." And then Tim arose and said, "It is a vain thing ye do to make light for the dead; for if ye stay not the plague we are all as dead men: and the evil name of our city will cause men to be afraid, and there will be none to trade with us or sojourn within our gates, and we shall be even as the desert and the stony place"; "Succour ye now the poor, and leave the Sorcerer to his own devices, and the blessing of the Lord shall be thine." And Thomas arose and said, "Nay, thy promise hath been made unto this stranger, an ye be men, ye will see to it and keep it." And many there were that arose and followed Tim. And Rufus was full sore, and dishevelled his tresses; and Thomas swore a mighty oath that the city should have the light from far away, though the inhabitants died and there were none to see it; and he and Rufus smiled and said when they are all gone, let us not divide the spoil but cast lots for it. But Rufus said, "Nay, all I leave thou canst have;" this he said knowing that Thomas had already been to the Treasury. And men began to murmur, and many arose in that city and called upon Thomas and Rufus to show unto them that the light would be good, and the burden light. And this they could not do, as many had shown the light of the stranger could not be good, and that the burden would be grievous, and would have to be borne by their children's children, even unto the third or fourth generation; and the latter would ask what was this thing for which our forefathers had to bear the burden? And they would be answered: "Lo! behold the watch-tower wherein the light once shone, but all else is as the great dead, only a memory." But Thomas arose and did shout unto the people to get them gone to their houses; and men were afraid, for his voice was as the voice of the leviathan that swimmeth in the deep sea, and rendeth men's ears when it crieth aloud. And Thomas and Rufus smiled. And Thomas said unto Rufus, "We must be up and do this thing ere the murmuring slaves see the manner wherein we do it," but Rufus

answered unto him, "Oh, Thomas. Great is thy power, and great is the softness of my tongue, but neither thy might, nor the honey of my speech, availeth aught without the power of a vast quantity of shekels; and behold, now, I have abode here for many seasons, and of the promised gift have I not received any, and I am an hungered and weak, and cannot perform this great work unless thou uphold me." And Thomas said, "Behold, it is good, and thou shalt have thy heart's desire," and Rufus said unto him, "Do thou this thing." And Thomas called unto himself one of his servants, one who dealt in the market place in the things that the Princes had no further use for, and received the tablets of the scribes, records which had become nought, and which he returned to the hands of his women to be sorted and made new; and, of his women sorters made he important persons. Now, unto him Thomas spake, and he said "See thou, whom I have made a ruler in this city, that thou and thy brethren give unto this prophet from a far country gold and silver and workmen that he may make us this great light." And his bondsman answered and said "O, Lord live for ever, and it shall be even as thou directest, but there lieth not sufficient gold or silver within the Treasure house wherewith to do this thing," and Thomas answering said "Then we must prostrate ourselves before the King and peradventure he will lend unto us these monies, and the peoples of the city shall be hostages to the King until the uttermost farthing hath been restored;" and his servant said "it shall be even as my Lord willeth, but what of the peoples, for even now they have not wherewithall to till themselves, and under this burden they will faint and die;" and Thomas replying said "I have nought to do with this, see thou to it, and on thy head be it if the mighty Rufus be not satisfied to the full with gold and silver;" and his servant bowed the head and went out from his presence. And it came to pass as the Elders sat in judgment that one John, who had returned to the Council, rose up and accused Thomas of being an enemy of the people, and a gatherer in of the gold that was to be given, and that the light was not for the people's good or their children's, and that no man could tell whither the monies were carried, or what portion thereof carried on the way. And then Thomas arose in his wrath, and his voice was terrible to hearken to, for it soundeth like unto men tearing asunder the cloths of thick linen, and he called aloud unto John saying, by his Gods that John had looked upon the wine cup when it was ruddy, and hence his speech bewrayeth his sense, and John said, "Nay! I have only this day stood within the market wherof thou art lord, to observe thee at the receipt of custom"; but the smell was as the smell of the fish driven on the sea shore, where they putrify and thicken the nostrils of men. And Thomas's wrath knew no end, and he fought with John, but John prevailed against him, and smote him sore, and the King, when he heard of this thing, did take away the position of honour that had been bestowed upon Thomas, and he wandered from amongst the people. But Tim built houses and tended the sick of that city; and so the pestilence departed therefrom; and men came from afar and marvelled at the beauty thereof, and the strength of the men and the comeliness of the women, and all men with one accord blessed Tim, who had done this thing.

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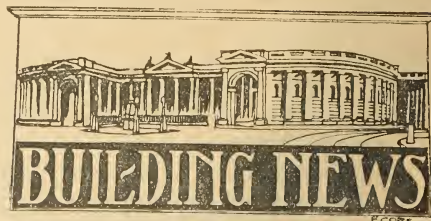
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Armagh.—The New Military Barracks at Armagh, built by Mr. A. Whelan, of Newry, from designs prepared by Mr. A. D. Geddes, F.S.I., comprise two blocks for soldiers' quarters, each 160 feet by 36 feet; a building for warrant officer; a cook-house, fitted up with the most modern appliances; a bath building, a suite of latrines, new gas-house, and a thoroughly efficient system of drainage.

The contract for the vaulting of the side aisles of St. Patrick's R.C. Cathedral has been let to Mr. James Kiernan, of Dublin. The work is to be done in Caen stone, and the Architect is Mr. G. C. Ashlin, R.H.A., also of Dublin. Mr. D. W. Morris, of Dublin, prepared the quantities.

The want of a suitable hall has been felt for a number of years in Kildartown parish. An effort is being made to provide a building beside the church, which will be useful for all parochial purposes. The project was taken up with much enthusiasm, and a Committee was formed to solicit contributions from all friends and well-wishers of the parish.

Aghadowey.—The new Roman Catholic Church here was dedicated on Sunday by the Bishop of the diocese. The old church had become inadequate for the congregation which is connected with the parish of Killowen, Coleraine, and the parish priest, Rev. Bernard Mulholland, set himself to the task of erecting a new one, which was opened on Sunday, entirely free of debt. Special trains were run on the Derry Central line from Coleraine and Magherafelt, and so many people availed themselves of the privilege that the church was overcrowded.

Belfast.—NEW FISHERWELL PRESBYTERIAN CHURCH.—We regret that in the report of the opening of above published in our last issue Mr. J. T. Ebner's name (of London) was inadvertently omitted as having supplied all the wood block floors for church and schools through Mr. H. J. Shaw, Belfast, agent for Ireland.

New offices for Messrs. Kirker, Green & Co., in Academy-street, have just been completed. Mr. J. F. Ebner, of London, has here executed some fine mosaic work, while throughout the offices wood block is used, also laid by Mr. Ebner.

A beautiful stained-glass window has been erected in the chancel of the new Presbyterian Church on the Malone-road, Fisherwick, Belfast, to the memory of the late Rev. James Morgan, D.D., and the Rev. Henry M. Williamson, M.A., D.D. It consists of two lights, and the work, which is free in treatment, is in great contrast to the usual orthodox observance of the 14th and 15th centuries. The main subject in the upper portion is a description of the heavenly city as recorded in Rev. xxi. 2, while underneath this part are depicted the saints who rise to meet the Heavenly Host. The colouring is graduated from the extreme height in the tracery (void of any canopies), giving a golden hue symbolising the glory of the city, to the deeper and richer colours in the drapery of the lower figures. The base embodies one subject through the two lights—that contained in Acts xvii. 22-34. The principal figure is that of St. Paul, with outstretched hand, declaring to the Epicureans and Stoics, among whom were Dionysius the Areopagite, Demetrius, and others, the doctrine of the Resurrection, beginning with the passage "For in Him we live and move and have our being." The execution of the various figures has been carried out to avoid anything of a conventional character, and care has been taken to prevent overcrowding, and to preserve the transparency of the glass employed. At the foot of the window there is the text:—"And they that be wise shall shine as the brightness of the firmament, and they that turn many to righteous-

ness as the stars for ever and ever." Daniel xii., 3. The work is from the studio of Messrs. Swaine, Bourne, and Son, King Edward-road, Birmingham.

Blackrock.—Mr. Thomas Clarke brought forward the question of a new dispensary for Blackrock, at the last meeting of the Rethdown Board of Guardians. The present site belonged to the gavelians, and it was proposed to erect a new and commodious structure upon the place. The estimated cost was £1,000, but he would suggest that Mr. J. J. O'Callaghan, the architect, might be asked to modify the plans so as to bring the cost down to £300. Mr. Kennedy thought that one of the artisan's buildings would do well for the purpose, and he would propose as an amendment that the matter be referred to the Committee for consideration. Mr. Clarke mentioned that the buildings referred to could not be used as a technical school, and it was scarcely reasonable to think they could be made available for a dispensary. The amendment was lost on a division by nine votes to eleven against, and the original motion was also defeated by eight for to ten against. The matter, therefore, hangs in abeyance.

Cavan.—Extensive painting works are to be undertaken at Co. Cavan Infirmary. Mr. C. A. O'Brien, registrar, wants the estimates to be in by 17th June inst. The joint committee of management are the employers.

Castlebar.—The large new church of St. Mary, which it is hoped will be dedicated this month, is now practically completed. Mr. J. F. Ebner, of London, has secured the contract for the whole of the wood block pitch pine flooring—a very big area. The chancel and chapels are being tiled by Messrs. Craven, Dunnill, and Co., of Jackfield, from a special design of mediæval tiles. Mr. J. C. Edwards, of Raabon, has secured the order for all the tiling of the baptistery, narthex, porches, &c.

Celbridge (Co. Kildare).—Four cottages are about to be built by the District Council from plans by Mr. Whelan, architect. Mr. F. Short, clerk of the Council, must have the tenders by Friday next.

Clonmel.—THE LUNATIC ASYLUM.—MR. FULLER'S FEES.—Mr. J. F. Fuller, Dublin, wrote:—"As requested by you I furnish particulars of my claim for fees. In May, '96, as your minutes will show, it was proposed to take over a portion of the workhouse. A survey was made, and the plans were prepared. The estimated cost was £10,000. This scheme was not sanctioned by the Local Government Board, and in '97 plans for a new hospital building were prepared by order of the Board of Control with the approval of the local board. I think this was in June, '97. The cost approximately was £40,000 to £45,000. I have computed my figures on the lesser figure, and on the £10,000 for the workhouse plans. The Board of control established for all asylum architects a reduced scale of fees at four per cent., to which the profession had to submit. Two per cent of this scale would be payable to me if estimates had been got and contract entered into, but matters did not reach this stage, and I can only claim the rate of 1 per cent, namely £500. I understand that in the opinion of some members of the committee I have no claim. I beg to say that in a similar case in the north, in which I was personally interested, the new Committee of Management held a meeting repudiating the action of the late board and the Board of Control—quashed the proceedings of the old board, and there and then appointed a local architect. A writ was (by advice of counsel) served, with the result that (presumably also by advice of counsel) the sum of £1,500 has now been lodged in court. Another recent case is that of Belfast, where a similar course was followed, and with the result that the committee has paid the firm of architects their full fees on the cost of the proposed new asylum. Surprise has been expressed that I should have made no claim till now. The matter is easily explained. I was informed that the works would have to be done, when I could claim my full fees. The new Act was passed recently, and I naturally wanted to see what course the new council would pursue towards me.

Dr. Harvey.—He does not say by whom he was appointed or at what time.

Chairman.—He was appointed by the old Board of Governors. We have the resolution.

Dr. Harvey.—That was about the end of '95.

Mr. Heffernan said no business man would have allowed a claim of £500 or £600 to remain so long unmoved if he could establish his title to it. He now came forward with it to get the management of the building. The letter would have no weight with him (Mr. Heffernan).

Chairman.—He was only allowed six months after the passing of the Act to furnish his accounts, and in an extreme case six months more might be allowed.

Mr. Grubb said the County Council and Asylum Committee were disqualified from paying without the sanction of the Local Government Board after six months, but the Act did not go so far as to override the powers of judge and jury from giving a verdict.

Chairman.—I don't see why we should pay. It is only three years since we took over this asylum.

Captain Motton.—There would be no question of our paying at all if we took on Mr. Fuller as architect.

Mr. O'Donnell.—The proper steps were taken on Father Scanlan's suggestion.

A Member.—It is a very weak way of putting his case.

Mr. Heffernan.—He tries to force our hands.

Mr. Grubb.—According to the rules of the Society of Architects, if it had gone as far as taking tenders we would have been liable to 2 per cent. His statement on that point is true.

Dr. Ryan.—But the plans were never approved of. The whole thing was put on one side.

Chairman.—The new buildings will probably cost £13,000, and that would mean £600, and is he going to forego £100 or £500 for that?

Father Scanlan.—According to the recent report of the inspectors, the works you are now invited to undertake will only be looked upon as the nucleus of a new asylum. It is a most serious thing for you if you are only just beginning to build after having done so much building for the last six years. I don't think you can give it your serious consideration. If Mr. Fuller does not forego his claim absolutely we ought to take legal advice, and not be working in the dark. He didn't threaten us yet, though he talks of law. We cannot take the responsibility of involving ourselves in a lawsuit.

Several members thought this a very wise suggestion, and, on the suggestion of Father Scanlan, it was decided to have the opinion of The MacDermot, K.C., on the matter.

Sligo.—The Irish Trades Union Congress, which was held in Sligo during the first half of last week, was interesting as an indication of the trend of thought amongst the Irish workers, and in some respects its proceedings were suggestive and useful. The opening speech of the president was admirable in tone and matter; so, too, were some of the resolutions adopted, but there were others which were undoubtedly utopian in character, and some the wisdom of which was at least questionable. The greatest interest of the Congress, however, lies in the opportunity it affords for examining the progress that has been made in recent years in reference to the claims and grievances of the Irish trade unions. It is only seven years ago since this annual Irish Parliament of Labour was originated, yet epoch-making events have taken place since, and the worker, not of Ireland only, but of all the three countries, has received many legislative boons from the institution.

Dublin.—The Dublin County Council seek estimates for furnishing their new offices at Rutland Square. Proposals must be made before 11th June.

It may be of interest to the readers of our journal to know that Messrs. J. and R. Thompson, of Belfast, have been successful in securing the contract for re-building Abbey-street Methodist Church, Dublin, the contract price being £4,500, Mr. Geo. F. Beckett is the architect for the new structure, and Rev. P. E. Donovan is the minister of the church. Following the lead taken by several other Belfast builders, Messrs. Thompson have established a branch yard in Dublin, at Fairview, where they are erecting about one hundred houses. The first block, consisting of twenty-three houses, to let at about £40 per annum each, is at present under construction.

Dublin.—The Dublin Tramways Company are about erecting 13 cottages at Clontarf. The plans and specifications have been prepared by the company's engineer, Mr. S. P. Nugent, C.E., and tenders will be received by the secretary up to 12 noon on 10th inst.

Dundrum (Co. Dublin).—The Committee of Management of the Central Asylum invite tenders for the proposed alterations and additions to the Asylum. The tenders will be considered on 12th June. Mr. J. F. Fuller, of Brunswick Chambers, Dublin, is the Architect.

Dunmanway (Co. Cork).—The tenders for the new Munster and Leinster Bank were received recently, and the work was given to Mr. Samuel Hill, of Cork, the price being about £1,800. Mr. Arthur Hill, M.A., B.E., of Cork, is the architect. Mr. D. W. Morris, of Dublin, prepared the quantities.

Dungarvan.—THE COTTAGES. —The Clerk intimated that the cost of repairs to labourers' cottages amounted to £10 10s. 6d. After some discussion, Mr. P. Beresford proposed, and Mr. McCarthy seconded the following resolution, which was adopted:—"That a clause be inserted in specification for building labourers' cottages and plots to compel contractors to keep them in repair for two years after completion."

Dalkey.—LOCAL GOVERNMENT BOARD INQUIRY.—Mr. P. C. Cowan, Chief Engineer Local Government Board, held an inquiry in the Town Hall, Dalkey, into an application from the Dalkey Urban District Council for the loan of £2,800 and £2,200 for the purposes of concreting and kerbing footpaths, and the erection of working-class lodging houses, under the Housing of the Working Classes Acts, respectively. Mr. Robert White presented a petition signed by some ratepayers in opposition to the loan for the footpaths. He stated that the footpaths from Sandymount green to Merriem were asphalted, and yet one evening he saw but three people using them. The petitioners did not object to the artisans' houses, but to the doing of the footpaths, as it was a ridiculous and nonsensical scheme. Mr. Edward Bradford, of Sorrento-road, objected to the building of the houses, on the grounds that the labouring classes in Dalkey were not sufficiently large to warrant the expenditure. He did not oppose the doing of the footpaths.

The Urban District Council propose to erect a public library from plans prepared by their surveyor, Mr. S. R. Going, C.E. The tenders must be delivered to Mr. J. P. Gahan, the Town Clerk of Dalkey, on or before 12 noon, on 12th inst.

Enniscorthy.—IMPERFECT PLANS OF LABOURERS' COTTAGES.—The Local Government Board wrote again returning plans of cottages proposed to be erected in the district under the Labourers' Acts, and pointing out that the documents had not been amended in respect to Nos. 1, 3, 8, and 9, and requesting that the matter be attended to. It was ordered that the required amendment be made in the plans. The Chairman suggested that notice of motion be handed in that the hospital building be proceeded with. This was agreed to.

Ferns.—Estimates are required for the works to be done at the Cathedral, Ferns. The architect is Mr. J. F. Fuller, 179 Great Brunswick-street, Dublin, with whom the tenders must be lodged before 20th inst.

Howth and Raheny.—LABOURERS' COTTAGES.—On the motion of Mr. Lynch, seconded by Mr. M'Loughlin, at the last meeting of the North Dublin R.D.C., it was decided to insert advertisements for the erection of six labourers' cottages at Howth and four at Raheny. These are in addition to the fourteen which are about to be erected in the district.

Killarney.—At the meeting of the Committee of Management, to be held on 20th inst., tenders for carrying out the extensive alterations and additions to the Killarney District Lunatic Asylum, as designed by Mr. J. F. Futler, architect, will be dealt with.

Loughlinstown (Co. Dublin).—Three tenders were received for the building of a Roman Catholic chapel and nuns' residence in the Rathdown Workhouse grounds, and after some discussion the tender of Mr. Pemberton for £4,422 was approved of, on the motion of Mr. Reilly, seconded by Mr. Kennedy, at the last meeting of the Rathdown Board of Guardians.

Letterkenny.—ST. EUNAN'S CATHEDRAL.—The opening of St. Eunan's Cathedral on the 10th of June will afford an opportunity of seeing what Irish hands can do in oak, marble, freestone, and metals. With the exception of most of the stained glass and a very small proportion of the marble, everything in the building is Irish material, wrought by Irish workmen. Though Belfast and Derry have had a fair share, the number of contracts placed with Dublin firms, and executed most satisfactorily, is unprecedented, at least in recent times, for any one structure. We subjoin a list, by no means exhaustive, of these contracts:—Timber, Messrs. Kelly, Thomas-street; ceilings, Messrs. Brooks, Thomas & Co.; high altar, Mr. Sharpe, Great Brunswick-street; pulpit and sanctuary railing, Mr. Pearse, Great Brunswick-street; Lady Altar and St. Columba's Altar, Mr. Ryan, Dominick-street; "Theology" for the Sacred Heart Altar and holy water fountains, Mr. Smyth, Great Brunswick-street; vestments, Loretto Workroom, Dalkey; sanctuary lamp and Tabernacle door, Messrs. Smyth, Wicklow-street; chime of bells, Mr. Byrne, Fountain Head Foundry; organ, Messrs. Telford; general sacristy requirements, Messrs. Gill; bishop's throne and chair stalls, Messrs. Beakey; confessionals, Messrs. Noonan; oak seats and case for organ, Messrs. Dovey and Mullaly; oak porch, Messrs. Sharpe & Emery; baptism gates, Messrs. Fagan & Co.; candlesticks and vases, Messrs. Kane and Gunning; stained glass window in Baptistry chapel, Mr. Clarke; ornamental gates and railing of enclosure, Messrs. M'Goughlin.

On 22nd May the set of bells made by Mr. Byrne at his foundry in James's-street for Letterkenny Cathedral was conveyed in lorries from the foundry to the North Wall for shipment to the capital of Donegal. The bells attracted a great deal of attention and admiration as they were being taken through the city. The great bell of the chime was placed on a large lorry, and, having regard to its great weight, the powerful animal attached to the lorry had its strength fully tested. The smaller bells were taken in three other lorries. Several streets were paraded, including Dame-street, Westmoreland-street, and O'Connell-street, on the way to the North Wall, and everywhere the greatest interest was taken in the procession and general inquiries made as to their destination, and where the bells were made. The greatest satisfaction was expressed when it was found that they were turned out in the city, and that such a branch of industry was still flourishing in our midst. On arriving in Letterkenny the bells will be at once placed "in situ," and will chime for the first time when the Letterkenny Cathedral is solemnly dedicated next month. The Most Rev. Dr. O'Donnell is to be congratulated on the splendid outcome of his encouragement of Irish manufacture in every department of the work.

Maryboro'.—Thirty benches for the chapel of the District Asylum are wanted at once. 12th of June is the last day for tenders, and the clerk is Mr. J. V. Coreoran, Maryboro'.

Mullingar.—The Committee of Management are about furnishing the new Chronic block. Proposals must be in before 12th inst. The same committee are about erecting pumping machinery and water mains at the Asylum. Estimates to be delivered on the date already mentioned above.

North Dublin.—The Rural District Council are about to build a further lot of labourers' cottages from the designs of Mr. Denis Morris, North Dublin Union, North Brunswick-street, chiefly in Howth and Raheny.

Omagh.—ERECTION OF LABOURERS' COTTAGES.—The Omagh Rural District Council invite Tenders from competent persons for the Erection of Labourers' Cottages in the different Divisions where contracts have not been already entered into. The New Specification can be seen at the Office of Mr. Donnelly, Architect, Omagh. Full particulars may be obtained on application to me, the Clerk. Sealed Tenders will be received by me up to Eleven o'clock on Saturday, the 8th June next.

Alterations are about to be carried out at the offices of the *Tyrone Constitution* from plans prepared by Mr. M. Sellars, C.E., Omagh. The tenders are required by 10th instant.

Roscommon.—There are vacancies for two assistant County Surveyors. The County Council will, at their meeting in Roscommon on June 13th, consider applications received at

their Secretary's Office not later than Tuesday, June 11th, from candidates aged between 21 and 45 years, each of whom must (Local Government Order 9th February, 1900) either (1) have diploma in engineering, or certificate of Civil Service Commissioners or of Local Government Board, or be Associate Member of Institute of Civil Engineers or of Municipal Engineers, or have been Assistant County Surveyor on 1st April, 1889; or (2) must have served as assistant under an engineer or architect for two years, or in an engineering school for one year, followed by one year's experience in practical work; and, in addition, must pass examination by Local Government Board Examiners in English, mensuration, surveying, levelling, building, and roadmaking. The area of each division is nearly 200 square miles. The duties include inspections and reports in reference to all public works quarterly, and more frequently whenever required by the County Surveyor, or to ensure fulfilment of contracts, attendance at Council meetings, and all other incidental duties according to the directions of the County Surveyor. The salary named is £50, to include all travelling expenses. Applications should be addressed to the Secretary to the County Council, Roscommon.

Rathdown (Co. Dublin) Contracts.—George Bower proposed to build the labourers' cottages advertised at the rate of £176 per cottage. If built in pairs, £21 3s. od. per cottage less. On the motion of Councillor Rafferty, seconded by Councillor Reilly, it was decided to accept Bower's tender for the building of three pairs of cottages situated in Stillorgan and Ballybrack division, on condition that the single cottage be built in the Stillorgan division at £160. The Council accepted the tender of John Bannon, of Birr, for the building of the labourers' cottages at Rathmichael division on condition, that pairs should be built at £140 each; and a single cottage at £147 10s. od., for eight cottages. The Council also accepted the tender of Messrs. Stephen and John Hayden for cottages in Glencullen East Division, if built separate at £160 per cottage, and if in blocks at £310 per pair, contracts to be completed within six months from 1st July. Mr. R. M. Butler, of Dublin, is the Architect.

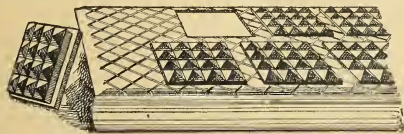
Sutton (Co. Dublin).—The Great Northern Railway Company want estimates for a 20,000 gallon cast-iron water tank, to be erected at their Sutton Station. Tenders, made out on the company's special form, must be lodged with the secretary at the Amiens-street terminus not later than Monday, 17th inst.

Wicklow.—The additions to the Dominican Convent, so long in abeyance, are about to be proceeded with. Mr. W. H. Byrne is the architect, and Mr. D. W. Morris the surveyor. both of Dublin.

DEATH OF A DISTINGUISHED ARCHITECT.

The death is announced of Mr. J. M. Brydon, Vice-President of the Royal Institute of British Architects, at the age of 51. Mr. Brydon was the architect of the Guildhall Victoria Art Gallery Technical Schools, and the extensions of the Pump Room at Bath, and he restored the ancient Roman Baths there. At the time of his death he was engaged in the construction of new offices for the Local Government Board and the Education Department in Whitehall, the foundations of which have been laid. He had also sent in a design for the rebuilding of the Old Bailey.

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15 GOLD MEDALS AND OTHER AWARDS.

W. GOODING, North Road Works, Holloway, LONDON, N.



Bray.—THE ELECTRIC LIGHTING.—Mr. T. Tomlinson, B.A., C.E., Electrical Engineer, of the Bray Township, has just commenced extensive operations on the Dargle weir with a view to increasing the head water for the race leading to the turbine. The turbine produces the current for the incandescent lighting of the township, while the arc lamps are worked with steam, and the increased water driving power will greatly add to and preserve the brilliancy of the former illuminants. The turbine can be also applied at advanced hours of the evening to the arc system with increased advantage and saving to the district.

Ballycastle.—The weekly meeting of the Board of Guardians was held on Saturday. The report of the Board's engineer was read as to fever hospital sewerage, which would entail a cost of £150. On the motion of the Chairman, a special meeting was called for that day two weeks to consider the plans and report, and to decide whether an application should be made for a loan.

Dungarvan.—The arbitrator having made his award, the Ballinacourt Water Scheme is about to be proceeded with. Mr. J. R. Dower is Clerk of the Dungarvan District Council.

Enniskillen.—A new sewerage scheme for the village of Derrygonnelly is out for tendering. The plans have been prepared by Mr. Thos. Elliot, C.E., of Enniskillen. The tenders must reach Mr. Richey Wilson, Clerk of No. 1 District Council, Enniskillen, by to-day.

Howth.—THE DRAINAGE.—A letter was read from the Local Government Board at the last meeting of the North Dublin R.D.C., forwarding an extract from the Medical Officer of the Clontarf and Howth No. 2 Dispensary District, in which the medical officer stated that the sanitary condition of the district was extremely bad owing to want of proper sewerage and proper water supply. The letter asked that they might be furnished with the observations of the District Council on the subject. On the motion of Mr. J. J. Coggins, seconded by Mr. Dinnage, the matter was referred to the Howth Local Committee formed recently at a meeting held at the St. Lawrence Hotel, at which several district councillors and other residents were present. A letter was also read from Mr. Rochfort, agent to Lord Howth, stating that his lordship proposed to spend £500 on drainage works in the district. The enclosed plans, which he said were objected to by some of the residents who owned property near where the outfall would discharge into the sea. The Council decided to submit the plans to the chief Engineer of the Local Government Board for his opinion.

Whitehead.—In connection with the proposed band promenades at Whitehead, a large and representative committee has just been formed to make the necessary arrangements. The proposal to increase the seating accommodation in Whitehead Presbyterian Church, by adding an additional wing, has been abandoned for the present.

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CORRESPONDENCE.

DUBLIN ELECTRIC LIGHTING.

SIR,—The revelations regarding the financial condition of the city, and the involved reply of Mr. O'Hara, the Chairman of the Finance Committee, all point the moral and adorn the tale which I have been telling the citizens for months past. If matters are in this condition to-day, what will they come to when the new electric lighting scheme is entered upon, or, rather, when it is proceeded with? For I understand that, despite the warning of the Board of Works, that in entering into contracts, etc., without first obtaining their sanction, and the Treasury's, they are "acting illegally and *ultra vires*," the Corporation have since attempted to enter into contracts for bricks, etc., for the Pigeon House station. This bears out my view expressed in a warning contained in a former letter—viz., that the champions of the scheme within the Corporation think that if they are quick enough to get a considerable amount of liabilities incurred over the job, the Board of Works, or the Treasury, would not be so hard-hearted as to surcharge them for their illegal expenditure, and will, regardless of their guardianship of the citizens, allow the ratepayers to be victimised. Surely it is time that the Board of Works notified them that they will not permit such a course of conduct. The exposure of the distress amongst the poor that has been shown to exist should silence the sneers of my benevolent critic, Mr. Brown, T.C., J.P., F.C.A., at my remarks as to the condition of death and desolation that exists in this, our city despite the efforts of our amiable chief sanitary authority, Sir Charles Cameron, to prove that not only our death-rate should be lower, but that Belfast's should be higher. This may be correct, but we are anxious to house our poor properly, and reduce our death-rate legitimately, and leave to other cities the task of looking after themselves. To house our poor and establish a financial fly-blister upon our resources are two things that are incompatible and impossible. —Yours, etc.,

28th May, 1901.

THE BOARD OF WORKS.

SIR,—Can any of your readers tell me if there now exist, in Dublin or its neighbourhood, any archaeological remains of the defunct Government Department formerly known to the public under the happy *pseudonym* of the "Board of WORKS"? I have reason to believe that its postal address survived as late as the close of last century; for, up to that time, communications addressed by me to it were not returned through the dead-letter office. The last chairman and secretary, so far as I have been able to trace official records, went by the names of Robertson and Williams—but what countrymen they were, history deponeth not. Any information as to the functions of this so-called Board of Works will also be gladly received by me. Law, of course, required that all plans of new buildings to be erected out of public funds should be sent to them for approval—but, as the buildings in question were usually erected a century or so before the approval was given, this seems to have been merely an ornamental function. The last plans sent to them

C.E.

by me were, as I have said above, sent towards the close of last century, since when I have had no reply. The Board is, therefore, now merely a matter of archaeological interest, and, as there must still be a few people living who can remember it, it would be well that these should give their recollection to the world before it is too late. Such obsolete old Boards are fast disappearing from our history, and it is but fitting that some record of them should be kept.—Yours, etc.,

A NORTHERN ARCHITECT.

P.S.—Perhaps the remains of the Board of Works have now passed into the hands of the Commissioners for the Preservation of Ancient Monuments?

Belfast, 15th May, 1901.

CONTRACT.

CITY OF DUBLIN ELECTRICITY SUPPLY.

TRANSFORMER SUB-STATION BUILDINGS.

The Lighting Committee of the Corporation of the City of Dublin are prepared to receive Tenders for the Erection of Transformer Sub-Station Buildings in connection with the Municipal Electricity Works in various positions within the City of Dublin.

The drawings and the bills of quantities, conditions of contract, specification, and formoftender may be inspected at the offices of the City Engineer, Mr. Spencer Hart, M.I.C.E.L., City Hall, Dublin, or at the offices of Mr. Robert Hammond, M.Inst., C.E., 64 Victoria-street, Westminster, London, S.W., and copies of the specification and quantities may be obtained from the City Engineer on and after Saturday, June 8th, on payment of £3 3s., which sum will be refunded on the receipt of a *bonafide* tender, duly filled in on the form at the end of the general conditions and specification, together with the duplicate copy of the bill of quantities in a separate sealed cover, marked on the outside with the name of the tenderer.

Tenders (sealed, and marked "Tender for Transformer Sub-station Buildings") must be addressed to me at the City Hall, Dublin, and be delivered not later than 12 o'clock noon on Friday, June 14th, 1901.

Each tender must contain the names of two sureties, who will be prepared to execute a joint and several bond for the due performance of the contract in a sum of £20 per cent. of the contract price.

The Committee do not bind themselves to accept the lowest or any tender, and reserve the right to accept the tender for one or more types of the Buildings.

FRED. J. ALLAN,
Secretary, Lighting Committee.

City Hall, Dublin.

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FORM OF BLOCK.

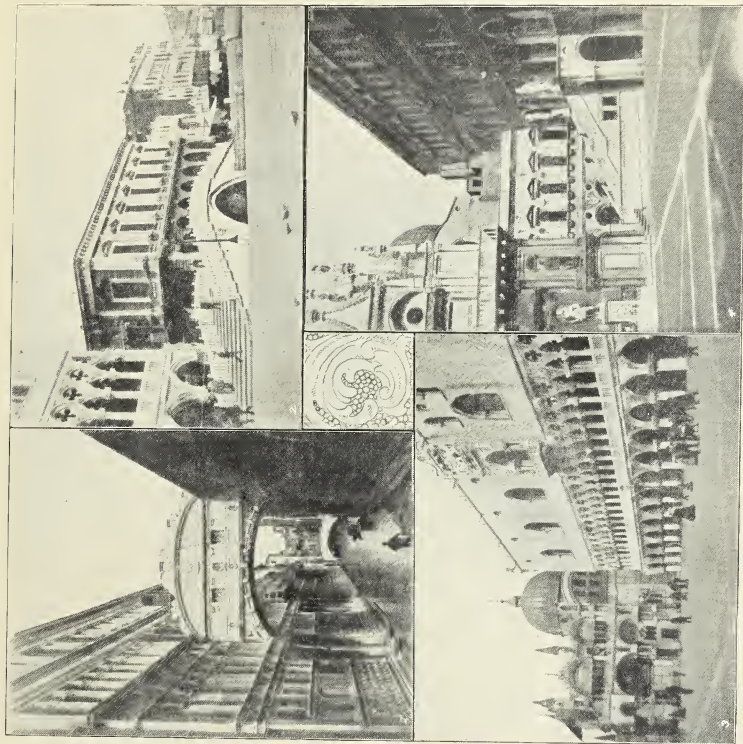


VIEWS IN VENICE.

FROM PHOTOGRAPHS BY

MR. LORENZO BAKER, ARCHITECT, DUBLIN

1. Bridge—A View.
2. The Doge's Palace.
3. Plaza San Marco—A View.
4. Ducal Palace and the Giant's Stairs.



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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4s. per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly forward renewals to 11 Lower Sackville Street, Dublin. Subscribers can also assist by mentioning the paper, especially when corresponding with advertisers, and bring it under the notice of friends likely to subscribe.

VOL XLIII.

JUNE 6, 1901.

No. 594

The Cork Exhibition.

At a large public meeting held on Thursday, March 7, 1901, and presided over by the Right Hon. Edward Fitzgerald, Lord Mayor of Cork, who was supported by the Right Hon. the Earl of Bandon, K.P., Lieutenant of the County and City of Cork, and by a large number of the leading representative men of the county and city, it was unanimously resolved:—

"That it is desirable to hold an Exhibition of such Arts, Manufactures, Products, Machinery, and Appliances, as may be calculated to stimulate the growth and improvement of Manufacturing, Agricultural, and other Industries and Handicrafts throughout Ireland; and that such an Exhibition be opened in the City of Cork, in the month of May, 1902."

In furtherance of this resolution I have been requested by the Executive Committee appointed to carry out the details of the Exhibition, to solicit your subscription towards the requisite funds.

It is scarcely necessary to point out the great advantage the holding of such an Exhibition must prove to the industrial classes of all Ireland, calculated as it is to stimulate our industries, and improve the condition of our people of every creed and class.

As a very large sum of money will be required to carry out this undertaking successfully, the committee hope that all who are interested in the prosperity of the country will assist them to the utmost of their power by a substantial and speedy response.

Such a project as this is surely deserving of the best help of every patriotic Irishman of every creed and class. Exhibitions like these often do wonders in the industrial uplifting of a country. The effects of the great Exhibition of 1852 in London are manifest to this day, and as it is now long since we have had any Exhibition on a large scale in Ireland it only remains for us to wish the project every possible success. In the special lines indicated by the resolution there should be a most admirable opening for a display which could not fail to be productive of lasting good. A very influential committee has been formed in Dublin.

The Close of the Session of the A.A.I.

A very successful closing meeting for the Session 1900-1 was held by the Architectural Association of Ireland on Thursday last.

The outgoing president, Mr. F. Batchelor, delivered a valedictory address to the members, reviewing the work of the session. The various class reports read, and the keener competition for the prizes offered, bespeak an increased degree of

health in the organization. Many there were who feared lest the burst of energy which marked the start of this association would prove but a passing wave. Happy to relate, such fears have proved groundless, and the Association is, to-day, bigger, stronger, and more filled with life and energy than in any other period since its inception.

A number of interesting remarks by various members were offered, but, far and away the most important was the pronouncement made by Mr. Rawson Carroll, F.R.I.B.A. The Vice-President of the Royal Institute of the Architects of Ireland, who, in the course of some congratulatory observations on the excellent work of the past session, said, reviewing the efforts now being made to encourage and facilitate study, a doubt arose as to the ultimate utility of so much hard work on the part of the student when he found himself at the end of the term of active study robbed of the fruits of his labours through the unscrupulous competition of unqualified persons, and the course of events during recent years pointed to the necessity for some protective registration. He felt assured that it would become imperative for the Irish Institute and the allied British Institute to consider whether the time had not arrived to deal with this important question. We, for our own part, cannot doubt that such is the opinion of the vast majority of Irish and English provincial architects, and it seems a pity that a few London architects, howsoever eminent they may be, should cast their influence against a reform so obviously needed and so essential in the interests of the great body of their professional brethren.

A Revolutionising Law Case.

THE EAVES GUTTERS OF YOUR HOUSE MAY BE PUBLIC SEWERS!

In this issue we give in full legal form a special report of the recent case of the *Pembroke Urban District Council v. Whitty*. As we have already commented upon the novel issues raised and their importance, we simply refer our readers to the report itself.

Messrs. E. & F. Spon, Ltd., of London, send us a copy of their latest catalogue of books for architects, surveyors, and others engaged in building. It contains a very excellent collection of works dealing with the various branches of professional study, some of which we have had the pleasure of reviewing from time to time. Architects and engineers should send for a copy of this catalogue, in which they are sure to find something which will strike their fancy.

The Editor of *Stone*, a New York technical journal, writes us enclosing a couple of copies of the current number of his excellent publication, in which he reproduces an article which has appeared in our columns on the subject of Irish building. The illustrations which *Stone* has been enabled to add greatly increase the interest of the article.

The B. and S. Gate Company, of Tower-street, St. Martin's-lane, London, makers of the well-known and popular folding gates, send us an interesting show-card which gives a wonderful profile photograph of New York and a bird's-eye view of its "skyscrapers." The first view, showing the city in profile as viewed from the New Jersey side of the Hudson River, gives a wonderful idea of the magnitude of these remarkable examples of modern American enterprise and constructive skill. Viewed in line with Trinity Church, one of the best known of New York churches, the latter appears of quite Lilliputian proportions.

DUBLIN ARTISANS' DWELLINGS COMPANY.

The directors' report for the year ending December 31, 1900, states that all the houses contracted for on the Rialto and Harold's Cross sites have been completed during the year, and the company is not now in possession of any land available for building. The company's existing buildings comprise 2,571 dwellings, and occupy about 52 acres. The directors have recently agreed for the acquisition of an estate containing 26 acres between Arbour Hill and the company's Aughrim-street property, and they are making arrangements to commence building on a part of this site immediately on possession being obtained.

OUR BELFAST LETTER.

Municipal building schemes generally are in a suspended state of animation owing to a shortness of money produced by the ill-considered expenditure of recent years. A few of the minor ones are, however, going on. Among others, it has been decided to establish branch libraries, and plans for the first of these are in the hands of Messrs. Blackwood and Jury, architects, Donegall-place, the proposed expenditure being about £4,000. The Asylum Board, now practically a committee of the City Council, propose to adopt the villa system for the Purdysburn Buildings. They inherited from the Board in existence prior to the Local Government Act, complete plans for asylum buildings, prepared by Messrs. Ferguson, Tillie, and Jackson; but, owing to new blood and a change of scheme, these architects have been paid off. A meeting is to be held in the Town Hall on the 28th inst. to make a fresh appointment, and, in consequence, the air is charged with canvassing at present.

The following contracts are advertised as open for tendering:—

Erection of a new branch of the Ulster Bank, Limited, in York-street. Messrs. Lepper and Fennell, Ms.R.I.A.I., architects. Bills of quantities obtainable from W. H. Stephens and Son, Donegall-square, North. Tenders to be lodged before 10 a.m., 31st inst., with architects.

Erection of a New Lecture Hall, Clough, Co. Down, for Committee of the First Presbyterian Church. Architects, Messrs. Blackwood and Jury, at whose office plans and specifications are to be seen. Tenders to be lodged with architects on or before 31st inst.

Erection of National Schoolhouse and Offices and Teacher's residence, Inishnahull Island. Plans and specifications to be seen at office of Lloyd's Agent, Ship-quay-street, Londonderry. Also erection of Residence for Lloyd's signalman, similar to Teacher's Residence. Tenders to be addressed to Secretary of Lloyd's, Royal Exchange, London, E.C., on or before 31st inst.

Erection of Curator's House, Botanic Gardens Park, Belfast. Drawings and specifications to be seen in City Surveyor's Office. Tenders to be lodged before 10 a.m., 29th inst.

Alterations and additions to Royal Academical Institution, Belfast. Architects, Messrs. Blackwood and Jury. Bills of quantities obtainable from Mr. S. C. Hunter, 2 Wellington-place. Tenders to be lodged with architects not later than Monday, 28th inst.

Bangor, Co. Down.—Plans of a new Retort House for Gas Works have been passed by the Urban Council, and sent to the Local Government Board for approval.

Newtownards, Co. Down.—Plans and specification prepared by Mr. Chappell, C.E., have been approved by the Local Government Board for Public Dispensary proposed to be erected by Major-General Montgomery, for use of Greayabey Dispensary District.

The report of Mr. Cowan, Engineering Inspector to the Local Government Board, on the scheme and plans of the Lisburn Urban-Council, for the amelioration of their sewerage, seems to me to convey anything but praise. He recommends that "the plans and other documents should be carefully revised and amended, to provide in a clear and definite way—(1) For a sufficient number of automatic flushing tanks, &c., &c." And he is further of opinion that the scheme "should not be finally settled without the advice of a consulting engineer" experienced in such municipal works; and the Urban Council "would, in the opinion of the Local Government Board, be well advised if, before the plans are prepared for contract, or for submission to the Local Government Board, they obtained such advice regarding the general suitability or sufficiency of the plans and specification, and the best forms of such important details as storm overflow, flushing tanks, and manholes," which is rather faint praise, I think.

A fine stained-glass window, from the studio of Messrs. Swaine, Bourne, and Son, King Edward's-road, Birmingham, has been unveiled in the new church of the Fisherwick (Pre-byterian) Congregation. It has been erected by congregational subscription to the memory of the late Rev. James Morgan, D.D., and the late Rev. Henry M. Williamson, D.D., former ministers of the Congregation.

DANVILLE ASBESTIC PLASTER.

Danville Asbestic Plaster is the name of a fire-proof plastering medium which is held to be fire-proof, crack-proof, stain-proof, sound-proof, and comparatively cheap. Painting and decoration are executed on it at once. In the grand new Carlton Hotel in the Haymarket, London, large quantities of it were used. All the large iron girders are thoroughly protected, and the contractors for the building have the highest opinion of its merits—an opinion derived from practical experience of its merits. It is cheap and easily used, while the Danville Company will also undertake the plastering work direct for contractors or architects.

It may be noted that some of the Assurance Companies will take insurance at 25 to 30 per cent. less premiums, where "Danville" is issued.

The Dublin agents are Messrs. Dockrell & Sons, of South Great George's-street.



At the recent general meeting of the Association the following resolution was handed in:—

"That in the opinion of this meeting of members of the Architectural Association of Ireland, the system under which the surveyors of Irish counties are permitted to engage in private practice constitutes a serious grievance and injury to the allied profession of architecture and engineering.

"That the hon. secretaries be directed to forward copies of resolution to the Chief Secretary and to the Members of Parliament for the City and County Dublin."

The retiring President, Mr. F. Batchelor gave a valedictory address, and the proceedings generally afforded ample evidence of the excellent and growing work being carried on by this association. As Sir Thomas Drew, P.R.H.A., observed in a recent letter to the Press:—

"An architectural association of young architects, architects' assistants, and architects' pupils, has in two years done a remarkable work in Dublin, in co-operative self-education and mutual improvement. It has surprised older architects to find what a body of really clever and industrious and enthusiastic students of the art of architecture Dublin could show, and what a high standard of mechanical draughtsmanship obtained in the business practice of architects in Ireland.

"There has always, however, been a strange apathy, traditional in Dublin, among this class, about acquiring the art of representing pictorially and artistically the works of architecture which they were content to project with compasses and squares in diagram plans, and elevations, very neatly and dexterously, and accurately, no doubt. The art of drawing in perspective, not a difficult one, but one which a true architect should be master of, to realise the effect of his own designs, is strangely neglected by draughtsmen of mechanical ability in Ireland. Consequently arises the practice of sending so much architectural work out of Dublin to be made pictorial in London by clever young artistic draughtsmen who make a good business by laying themselves out to produce taking pictures of architect's works for popular exhibition. This is not satisfactory. It reacts injuriously on the architectural school of the country. The younger draughtsmen of to-day recruit the ranks of practising architects of a next generation. Already many architects perceive in the tendency of Irish architecture an evil influence of too mechanical draughtsmanship, of a mannerism of abstract delineation of the drawing board, and a failure of appreciation of realised effect in mass, and light and shade, and especially of the qualities of simplicity and breadth and repose—the characteristics of a noble school of architecture."

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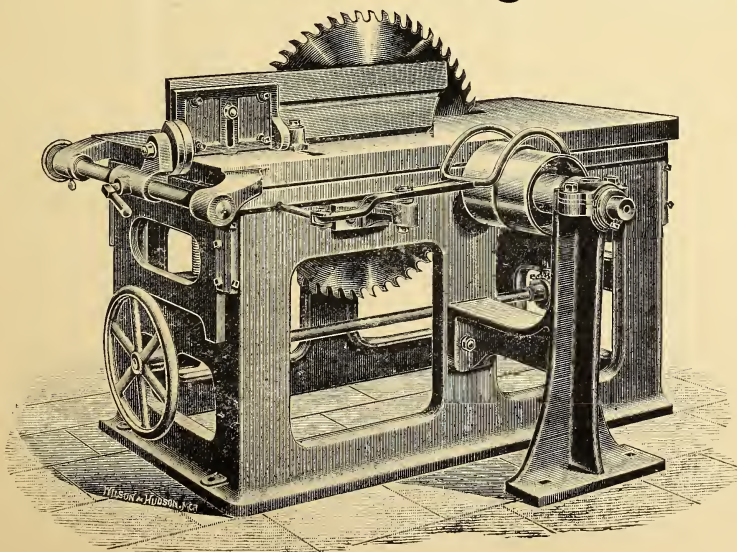
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ROUEN : ITS CATHEDRALS AND CHURCHES.

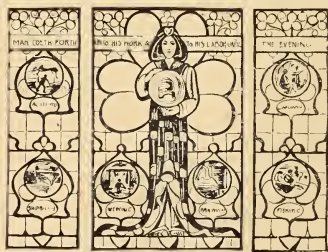
BELL'S HANDBOOK TO CONTINENTAL CHURCHES. By the Rev. Thomas Perkins, M.A., F.R.A.S. With fifty illustrations. London : George Bell and Sons, 1900.

A charming and pleasantly written little book is this—making one desire to once again see the glories of these great French churches. Written evidently by a man of liberal instincts and cultured taste, the little guide book is interesting from start to finish. Mr. Perkins gives a clear and concise account and description of the great churches of Rouen. The Cathedral Church of Notre Dame, the Abbey Church of St. Ouen, and the Church of St. Maclou, all of which are dealt with in a pleasantly discursive style, yet with a sufficient degree of historic research employed to make the book valuable as an authority, and a guide or manual for the intending student visitor. Needless to say, the famous "Tour de Beurre," or Butter Tower of Rouen Cathedral, is described, though the story of the origin of its name is somewhat warped. Our author says—"The Butter Tower received its name because the cost of its building was in great measure defrayed by money paid by the people for indulgences which permitted them to eat butter in Lent." Literally correct, perhaps—but misleading in its inference. More correct would it be to say, it was built from the alms given by those who were dispensed from abstinence from butter in Lent—a small difference, but an important distinction. Beyond such trifling criticisms, we have nothing but praise to offer, and commend this guide to the Churches of Rouen as an admirable and reliable handbook. In addition to the three great churches above-referred to, are described the minor churches of Rouen, amongst which is St. Patrice, remarkable for its sixteenth century painted glass and for its Irish dedication.

STAINED GLASS

EXHIBITED BY MESSRS. WARD & PARTNERS, OF 12 QUEEN STREET, BELFAST, AT THE GLASGOW INTERNATIONAL EXHIBITION, IN THE "IRISH PAVILION."

In the entrance hall is a bay-shaped screen in three lights, the centre one of which is depicted in rich coloured glasses a female figure of "Industry," holding in her hands

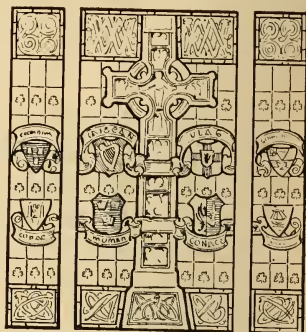


an iridescent globe, in which may be seen a bee-hive. Around the figure and in the two side-lights are Medallions



representing "Agriculture," "Shipbuilding," "Weaving," "Distilling and Brewing," "Fishing." These medallions are

enclosed in a decorated background of a conventional character, executed in the glass and leaded. Across the top of, and through the three lights, runs the motto, "Man goeth forth unto his work and to his labour until the evening."



Behind the figure of "Industry" may be traced the form of a large shamrock, forming an appropriate and suggestive background.



Also in the Entrance Hall are two figure lights of St. Patrick and St. Brigid, with emblems and general setting in keeping with each. In a separate room there is a window depicting a reproduction of a Celtic Cross, with ornament, in the same character of interlacing work at top and bottom, while the arms of the four provinces, with those of the chief towns in each, are also shown in heraldic colours, with ribbons running across the window connecting, on which the names of the provinces and chief towns are shown in Celtic lettering.

A painted and stained figure window is also exhibited in another room, the subject being "The Holy Family." In the foreground is a figure of the boy Christ assisting Joseph at carpentering, whilst Mary is shown as spinning. In the background, through an arcading, may be seen figures of angels. The subject is enclosed by a border of a Gothic treatment of the vine.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

N. A. CALENZATIS (Patras, Greece).—We have sent you copy of THE IRISH BUILDER as requested, and are glad to see we are becoming known so far afield.

FRANK W. HOYT (Editor of Stone, New York).—Many thanks for the two copies of Stone. Glad to see you have been able to make some use of our remarks. Your other articles interest us much.

M. J. C. BUCKLEY (Youghal).—Shall be glad to have your photographs and article

S. B. and Co.—In this issue you will see the case, to which we have made reference before, fully reported, with reference to decided cases in the High Court.

G. H. (Belfast).—Very grateful for your good wishes and kind expressions.

Owing to pressure on our space we are compelled to hold over to next issue "Specification" and "Notes on Road Construction."

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A NOVEL AND INTERESTING PUBLIC HEALTH CASE.

PEMBROKE URBAN DISTRICT COUNCIL v. WHITTY.

(SPECIAL REPORT.)

Before Ernest Swift, Esq., K.C., Dublin Metropolitan Police Magistrate.

Public Health—41 & 42 Vic., cap. 52, secs. 2, 72, 107, & 110—Drains—Sewers—Surface water—Privies—Removal of refuse through house—Proper water supply—Damp—Dilapidation—Nuisance—Concerning privy and ashpit floors—Structural defect.

Plaintiffs sued Defendant, the owner of 1, 2, 3, 4, 5, and 6 Shaw's-lane, Bath-avenue, under the 41 & 42 Vic., cap. 52, secs. 72, 107, & 110, to compel him to abate nuisances alleged to exist in each house by making properly constructed, "ventilated and trapped" drains connecting directly with main sewer, by cleansing and removing foul and dilapidated ashpit and privy, substituting therefor an ashbucket and water-closet, by repairing and making good the floors, eavesgutters, and roofs, and by putting in separate "water supply to each house." The existing drains of Nos. 5 and 6 were connected without plaintiffs' authority. All drains carried surface water and slops only. The privies and ashpits had in four cases to be cleansed through the house. Each house (save No. 1) had a separate water tap connected with a common private main which in turn was connected with plaintiff's main. No. 1 consists of one room only, and forms an integral part of No. 2. The requisitions as to roofs, eaves-gutters, and water supply of the entire premises and the extra drain, closet, and exit for No. 1 were withdrawn by plaintiffs or otherwise disposed of before the hearing. Held—That the "drain" of the house No. 6 was a "sewer" from the point where it received the drainage of No. 5, and as such vested in plaintiffs; that the conduits, although carrying surface water and slops only, were "drains" under sec. 2; that the defendant as owner had the option of selecting privies as the form of sanitary convenience necessary, and that the plaintiffs had no power under Section 107 to compel the substitution of water-closets therefor; and that the water supply provided by a separate tap to each house connected with a private main, which latter had one connection only with plaintiffs' main, is a "proper" water supply under section 72.

The facts of the case are as follows:—Captain R. C. I. Whitty is the owner, within the meaning of Section 2, of Nos. 1, 2, 3, 4, 5, and 6 Shaw's Cottages, Bath-avenue. Nos. 1 and 2 are one house, the occupier of which has a sublet one room. This room communicates with his cottage, but has a separate exit therefrom. The yard, privy, ashpit, and drain are common to both. On the 2th November, 1900, the following notice was served on the owner in respect to Nos. 1 and 2, and similar notices in respect to the residue of the premises.

PEMBROKE TOWNSHIP URBAN SANITARY DISTRICT, COUNTY OF DUBLIN.
FORM A.

Notice under The Public Health (Ireland) Acts.

To R. Whitty, Esq., owner of Nos. 1 and 2 Shaw's-lane, off Bath-avenue, in the Pembroke Township.

TAKE NOTICE that under the provisions of the Public Health (Ireland) Acts, the Pembroke Urban Sanitary Authority, being satisfied of the existence of a nuisance at Nos. 1 and 2 Shaw's-lane, off Bath-avenue, arising from the want of proper drains, privy and ashpit being foul and dilapidated, and when cleaned contents must be carried through the dwelling; no water closet, no ashbucket accommodation; floors, eavesgutters, and roof being in bad repair; wells of house being damp from rain water leaking from roof and eavesgutters; and there being no separate water supply, so as to be a nuisance or injurious to health, do hereby require you within fourteen days from the service of this Notice to abate the same, and for that purpose to put in properly constructed, ventilated, and trapped drains to connect direct with sewer in Shaw's-lane, cleanse and remove the foul and dilapidated ashpit and privy, and substitute in lieu thereof an ashbucket and water closet; repair and make good the floors, eavesgutters, and roof, and put in a separate water supply to said house.

If you make default in complying with the requisitions of this Notice, or if the said nuisance, though abated, is likely to recur, a summons will be issued requiring your attendance to answer a complaint which will be made to a Court of summary jurisdiction for enforcing the abatement of the nuisance, and prohibiting a recurrence thereof, or for recovering the costs and penalties that may be incurred thereby.

Dated at the Office of the Pembroke Urban Sanitary Authority, Ballsbridge, this 24th day of November, 1900.

JOHN J. REYNOLDS, Inspector of Nuisances.

The owner not having complied with the requisitions therein set out, plaintiffs issued a summons under Section 111 to compel his compliance therewith. After several ad-

jourments, the case came on for final hearing on the 16th May, 1901. It appeared from the evidence that each of the cottages was at one time separately connected with plaintiffs' main sewer, running through Shaw's-lane. At some period, several years ago, the drain of No. 5 was, without the consent or knowledge of the then sanitary authorities, connected with that of No. 6 by a junction made between the two drains in the back yard of No. 6. All said drains carry surface water only, and such slops as the occupiers from time to time throw into them. Plaintiffs alleged that all the existing drains were improperly trapped, and, though sufficient for their present use, would be unsuitable when water-closet accommodation was provided. The Medical Officer of Health for the Council stated in his evidence he disapproved of privies, and that the plaintiffs were now substituting water-closets in lieu thereof (wherever possible), and in his opinion, water-closets should be substituted for the existing privies. He further stated that when cleansing the privies and ashpits the excreta and ashpit refuse had to be carried through the houses. Plaintiffs admitted defendant's contention that 1 and 2 Shaw's Cottages now constituted one house, and withdrew their demand that it should have a separate water supply, water-closet, ashpit, and drain. They admitted they were in error in stating that the excreta and refuse of Nos. 1 and 2 should be carried through the house; and expressed themselves satisfied with the roofs, eaves-gutters, and down-pipes of all the houses, as repaired by the owner prior to the hearing. Plaintiffs' Medical Officer examined the premises, and stated he found no damp. Under these circumstances the counts above referred to did not come under the consideration of the court. Mr. R. M. Butler, the architect and engineer, on defendant's behalf, proved the connection between the drains of Nos. 5 and 6, and stated that in his opinion the refuse and contents of the privies of 3, 4, and 5, could be easily removed by carrying same over the low three-foot walls separating the yards. By emptying that of No. 3 in ba-kets (as is usual) into the adjoining yard (Nos. 1 and 2), which yard possesses a separate exit into the lane; that No. 5 could be emptied through the dairy-yard adjoining No. 6 by passing the refuse into the yard of the latter, which in turn could be emptied through a gate communicating with the dairy-yard and No. 4, through the yards of 4 or 5. He further proved that in the entire of a large number of labourers' cottages he is at present erecting according to plans sanctioned by the Local Government Board, privies are exclusively used.

Mr. Gerald Byrne, solicitor for plaintiffs, contended that by reason of the conduits carrying surface water only, and no sewage, they were not drains under the Public Health Act of 1878, Section 21, and that even if they were drains within the meaning of that section, none of them could by any private surreptitious connection be converted into sewers within the meaning of said section; and, moreover, that the junction between the drains of Nos. 5 and 6 was such a connection, and unauthorised by the plaintiffs. The plaintiffs were entitled under Sections 107², 110³, and 112⁴ to

1 Section 2 (part of).—"DRAIN" means any drain of and used for the drainage of one building only or of premises within the same curtilage, and made merely for the purpose of communicating therefrom with a cesspool or other like receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed.

"SEWER" includes sewers and drains of every description, except drains to which the word "drain" interpreted as aforesaid applies, and except drains vested in or under the control of any authority not being a sanitary authority under this Act.

2 Section 107 (part of).—For the purposes of this Act—

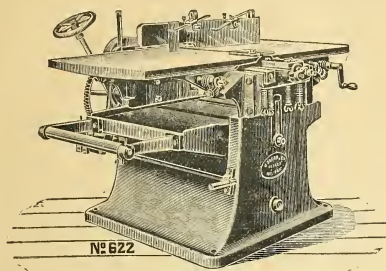
1. Any premises in such a state as to be a nuisance or injurious to health.

2. Any pool, ditch, gutter, watercourse, privy, urinal, cesspool, drain, or ashpit, so foul or in such a state as to be a nuisance or injurious to health—(Here follow five sub-sections not applicable to this case)—shall be deemed to be nuisances liable to be dealt with summarily in manner provided by this Act.

3 Section 110.—On the receipt of any information respecting the existence of a nuisance the sanitary authority shall, if satisfied of the existence of a nuisance, serve a notice on the person by whose act, default, or omission the nuisance arises or continues, or if such person cannot be found, or the owner or occupier of the premises on which the nuisance arises, requiring him to abate the same within a time to be specified in the notice, and to execute such works and do such things as may be necessary for that purpose:

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First.—That where the nuisance arises from the want or defective construction of



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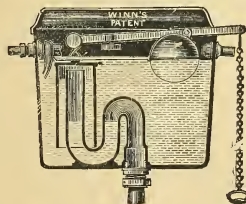
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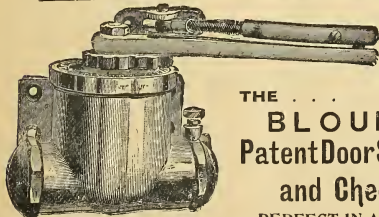
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have water-closets substituted for the existing privies, and to have drains laid in connection therewith, the asphalt abolished, and the other requirements of their notice complied with to the satisfaction of the sanitary authorities. The Medical Officer of Health could designate the particular form of sanitary accommodation, and the owner had no option in the matter. That carrying the contents of the privies and ashpits through the cottages constituted a nuisance under Section 107.

Mr. JOHNSON ROBERTS, solicitor for defendants, contended—as to the drains—that under Section 2¹ of the Public Health Act, 1878, any “drain” draining more than one building is a “sewer,” which accordingly vests in the sanitary authorities (under Section 15³), and for the up-keep of which they are responsible. This was decided in *Travis v. Utley, L.R. 1 Q.B.*, 233 (1894), in which case Justice Wright, delivering the judgment of the court, said: “To hold that what is really a private drain vests as a sewer in a local authority, is to hold that a local authority can take away part of a man’s land in order to perform its functions, and is also liable for the cost of keeping private property in repair—two apparent absurdities (Section 13 *English Public Health Act*, 1875) is plain, and the results may have been intended in order to avoid the difficulty of dealing with the complex right of several houses to use the same drain. No limitation of the definition of drain seems possible. It cannot be said either to apply to a drain which is part of a house, because a drain like this may run under a long row of houses not held by the same person, or under one title; or to apply only to drains which run through land dedicated to public uses, because in many towns the main sewers run under public houses or buildings, and they clearly ought not, for this reason, to be taken out of the control of the local authority.” Per Justice Wills:—“This drain is used for the drainage of more than one building. It is, therefore, a sewer. It is impossible to say that that part which is used for the drainage of one building is a drain, and the rest a sewer. The drain is a sewer from end to end.” Therefore under this decision, the drain of No. 6 is a “sewer” within the meaning of Section 2¹.

Now, as to the drains of Nos. 1, 2, 3, 4, and 5—a drain is a “drain” within the meaning of Section 2, even though it carries surface water only. To hold otherwise would be to render nugatory a large portion of the Public Health Acts, by creating a drain, which, though *de facto*, a drain, and possibly, untrapped, badly constructed, and communicating directly with the main sewer, yet not being a conduit for “drainage” within the meaning of Section 2¹ of the Act of 1878, would be neither a “drain” nor a “sewer,” and, consequently, not subject to the provisions contained in said Act relating to those constructions. Moreover, such an interpretation of the word “drainage” would be at variance with its plain meaning. That water falling on the surface of any portion of premises is surface water, seems an obvious and uncontested fact. That a conduit carrying such surface water is a drain for the drainage of such premises seems equally clear. Therefore, in the words of Lord Justice Smith in *Ferrand v. Hallas Land and Building Company, L.R. (1893), 2 Q.B.*, at p. 144, decided in the Court of Appeal: “A sewer need not necessarily convey sewage matter in order to constitute it a sewer. It would be none the less a sewer within the Act of 1875 if it conveyed only rain or surface water.

any structural convenience, or where there is no occupier of the premises, notice under this section shall be served on the owner;

Secondly.—That where the person causing the nuisance cannot be found, and it is clear the nuisance does not arise and continue by the act, default, or suffering of the owner or occupier of the premises, the sanitary authorities may themselves abate the same without further order.

4 Section 112.—If the court is satisfied that the alleged nuisance exists, or that although abated it is likely to recur on the same premises, the court shall make an order on such person requiring him to comply with all or any of the requirements of notice, or otherwise to abate the nuisance within a time specified in the order, and to do any works necessary for that purpose; or an order prohibiting the recurrence of the nuisance and directing the execution of any works necessary to prevent the recurrence; or an order both requiring abatement and prohibiting the recurrence of the nuisance. [The powers of the court as to penalty under this section and costs here follow.]

5 Section 15.—All existing and future sewers within the district of a sanitary authority, together with all buildings, works, materials, and things belonging thereto—[Here follow exceptions which do not apply to this case]—shall vest in and be under the control of such sanitary authority.

The draining off of rain or surface water collected from different premises by different feeders into one main drain, would constitute that main drain a “sewer” within the meaning of the Act.” Consistently to have decided otherwise would appear to have been impossible.

There is not a word in any portion of the Public Health Act’s restricting either the shape, location, material, construction, or dimensions of a “drain,” or even directing that it should of necessity be covered. Therefore, it clearly follows that if, in accordance with the decision last above cited, a conduit for carrying rain water only is a “drain,” a gutter, or series of gutters and down-pipes, which fulfil this office, must also be “drains,” and may even become “sewers.” That such is the case was decided in *Holland v. Lazarus, L.J. (1897), N.S., Vol. 66, Q.B.*, p. 286. There Mr. Justice Bruce held that a rain-water pipe was a “drain” for the “drainage” of a building within the meaning of Section 250 of the Metropolis Management Act (18 and 19 Vict., c. 120), and that the act of connecting it (even without the authority of the sanitary authorities) to a drain which drained an adjoining house, turned the latter “drain” in to a “sewer.”

In the present case on continuous cave gutter drains the roofs of the houses to 1 to 6 Shaw’s Cottages. This gutter is connected with the surface drains in each yard by down-pipes at intervals. The arrangement of the down-pipe is such that each down-pipe conveys to a surface drain the drainage of more than one building, which state of affairs brings them within the decisions in *Ferrand v. Hallas Land and Building Society, Travis v. Utley*, and *Holland v. Lazarus*, and constitutes them sewers. That the word “sewer” should always receive the largest “possible interpretation,” has long been the trend of the decisions. *Acton Local Board v. Ballen, L.R., 28 Ch. Div.*, p. 288. *Hummond v. Vestry of St. Pancras, L.R., 9 C.P.*, p. 316. *Humphries v. Cousins, L.R. 2 C.P.D.*, pp. 241, 247.

It has been stated that the act of the owner or one of his predecessors in title in joining the drain of No. 5 to that of No. 6 would not operate against plaintiffs, by reason of the fact that the junction was made without their knowledge. In the recent case of *Kershaw v. Taylor—(1895) L.R., 2 Q.B.*, 208, 471—the same proposition was unsuccessfully contended. Lord Justice Kay, delivering the judgment of the Court, said: “An attempt is made to get behind this conclusion” [i.e., that the drains became sewers even though the connection making them so was unauthorised] “by saying that the houses have been drained without the knowledge of the local authority, who ought, therefore, be entitled to say that the drainage is not by a sewer, but by a drain. The question, however, is: *rebus sic stantibus*, is this a drain or a sewer? And want of knowledge on the part of the local authority is no answer to the assertion of the respondent that he is not liable for anything but a drain.” This case was followed in *Reg. v. Vestry of St. Matthew, Bethnal Green (1896), L.R., 2 Q.B.*, 95, 319, and in *Florence v. Paddington Vestry, 12 T. L. R.* 30.

The existing drainage having been approved of at one time by the Sanitary Authorities they cannot now insist on new drainage, but can only make the owner keep the drains in such condition that no nuisance arises therefrom. Mere tacit approbation is sufficient. No formal act of approval is necessary. *Hornsey Local Board v. Davis (1893), L.R. 1 Q.B.*, 756. Moreover, the existing arrangements are *de facto* not nuisances, and are quite sufficient for the present wants of the cottages.

As to the Privies.

These proceedings being taken under sec. 107 the Justices have absolute power and discretion with or without the approval of the Sanitary authorities to direct whatever is necessary to abate the nuisance, and “they are completely unfettered in their judgment.” *Whitaker v. Derby Urban Sanitary Authority, 55, L.J.M.C. 8, Rep. v. Parby 22, Q.B.D.* 520. Even under sec. 45 (sec. 36 *English Act*, 1878), which vests absolute discretion in S.A., notice to put in a particular kind of closet—e.g., a water closet, without giving the owner statutory option of a w.c., earl closet or privy—is bad. *Wood v. Widnes Corporation, 66 L.J., Q.B.* 254 (1898); *Molloy v.*

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Gray, 24 L.R., Ir. at p. 277, see also sec. 46, P.H. Act, 1878 (mandatory). The strongest circumstances do not enable the Sanitary authorities to compel substitution of w.c.'s for privies, and "the use of privy system is nowhere condemned." *Barnett v. Luskey*, 68 L.J., Q.B. 55 (1899), 79 L.T. 408. In this case certain privies and ashpits became infested with typhoid germs which penetrated into the walls and brickwork of the structures. Several ineffectual attempts were made by the sanitary authorities to destroy them, and ultimately the owner was proceeded against under Section 94 of the English Public Health Act (Section 110³ of the Irish Act) to substitute w.c.'s therefor. It was moreover alleged that the fact of the walls and floors not being concreted constituted a structural defect within the meaning of the section (Sec. 94 Eng., Sec. 110 Ir.), per *Lord Russell of Killowen, O.J.*:—"Counsel for the respondent (the sanitary authorities) says they" (the privies and ashpits) "ought to have been concreted, but there is no evidence that this is usual or would have prevented the penetration of these germs; on the contrary, it appears that in time they would even get through concrete. Therefore, no nuisance arose from the structural character of the privies. The Legislature has nowhere condemned the use of the privy system," and in the report of the same case in the *Law Times*, at p. 411, the following additional remarks of the Lord Chief Justice appear:—"In answer to the question, What is a structural defect? it is said they" (the privies and ashpits) "ought to be concreted. But is that usual in such places as these, and even if they were concreted, would that be of any avail, for it is stated in the case as a fact, that these creatures (the bacteria) can in time penetrate porcelain. The Legislature has nowhere condemned the privy system." Justice Wills, in concurring, said (*L.T.* 79, at p. 412):—"In other words, it is argued that they" (the nuisance) "arose from the privy system being in use, not the water-closet system. . . . I entirely agree with the Lord Chief Justice that it is not fair to throw on the owners of the property the change from the privy system to the water-closet system without any expression on that behalf by the Legislature." The Local Government Board almost invariably use privies in houses erected under their authority. By analogy with the decision in *Hornsey Local Board v. Davis*, once the Sanitary authorities approved of a system of closets the owner cannot be compelled to alter same.

As to the nuisance alleged to be caused by carrying the excreta through the houses—if such a nuisance exists it is not of such a nature as to come within section 107 of the P.H.A. All the nuisances there contemplated are of a permanent nature, and even the illustrations in the Schedule to the Act point to a permanence. In the *Gt. Northern Railway Company, Appellants; Lurgan Commissioners, Respondents*, 2 Irish Reports, Q.B., 1897, p. 340, at p. 346, per *J. Holmes*:—"All through the Act 'nuisance' appears in conjunction with the alternative, 'injurious to health'—a nuisance or injurious to health—and would seem to apply to something of a permanent character. Take the case of a trader rolling barrels into his stores—a case that has given rise to a great deal of litigation in England—can it be suggested that Sec. 107 was intended to apply to such a matter at all? Take any of the sub-sections of Section 107. There is an idea of permanence running all through them. Take Sub-section B: 'Any animal so kept as to be a nuisance or injurious to health.' Take Sub-section C: 'Any factory, &c., not kept in a cleanly state.' I do not say, or mean to say, that should not or might not be legislation upon these matters, or that penalties should not be imposed for nuisances that are in some measure permanent; but we must look to the scope of this act, which is to enable the Sanitary Authority to keep the district in a sanitary state." Justice Johnson—"The

illustrations in the schedule forms also point to something of a permanent nature." Per *J. Holmes*, at p. 348—"The delivery of coal might equally, it would seem, amount to a nuisance within the sub-section if this is."

It has been advanced on behalf of the plaintiff, particularly as to the effect of a decision adverse to them, on the question of the sewers, gutters, &c., that it would involve them in enormous expense. That point is illustrated in the following case:

Attorney-General v. Town Council of Birmingham, 4 K. and J., 528, 6 W., R. 811: An injunction was granted to restrain defendants from carrying out their drainage operations. On defendant's behalf it was alleged that if the drains were stopped all the sewers of the town would overflow and that Birmingham would be converted into one vast cesspool.

Per Wood, V.C.:—"It has been urged upon me more than once during the argument by the counsel for the defendants that there are 250,000 inhabitants in Birmingham, and that this circumstance must be taken into consideration in determining the question of the plaintiff's rights to an injunction."

In the case of an individual claiming certain private rights, and seeking to have those rights protected against an infraction of the law, the question is simply whether he has those rights, and, if so, the court, looking to the precedents by which it must be governed in the exercise of its judicial discretion can interfere to protect them. Now, with regard to the question of the plaintiff's right to an injunction, it appears to me, that so far as this court is concerned, it is a matter of almost absolute indifference whether the decision will affect a population of 250,000 or a single individual carrying on a manufactory for his own benefit."

Section 72 of P.H.A., 1878, requires a "proper" water supply to each house, not necessarily a separate connection with the main.

Any nuisance existing by reason of the damp walls or rotten flooring was caused by the wrongful act of the P.U.D.C. in raising the road and pathways above the level of the cottage floors, and having same improperly drained. The defendant was not "the person by whose act, default, or sufferance the nuisance arises or continues," and the nuisance did not arise from "the want, or defective construction, of any structural convenience" within Section 110. Moreover, to abate the nuisance he would have to commit an offence under the Public Health Act, 1878, by unlawfully opening, and otherwise interfering with, the public road and pathway.

In all proceedings under the 107th Section, "the justices are given complete jurisdiction in the matter. They may order more or less than is mentioned in the notice, whatever is necessary to abate nuisance, and they are completely unfettered in their judgment."—per Day, J.

Whittaker v. Derby Urban Sanitary Authority, 55 L.J.M.C. 8: "The powers given to justices go far beyond those ever exercised by the Court of Chancery, which has never prescribed to the defendant against whom it granted an injunction the means by which a nuisance should be abated."

ERNEST SWIFTE, Esq., K.C.—Held that the drains at present existing at Nos. 1, 2, 3, 4, and 5, though they do not carry sewage, are "drains" within the meaning of Section 2. That the drain of No. 6 became a sewer by reason of the junction to it of the drain of No. 5 became a "sewer." That the fact that this junction was made without the authority of the sanitary authorities did not alter the case. That the owner has the option of putting in what sort of sanitary accommodation he thinks most suitable for the premises, and that in this case he has selected privies. That in proceedings under the 107th Section the magistrate has the power to direct what work has to be done, and that it has to be done to his satisfaction, not to that of the sanitary authorities. That a separate water-tap to each cottage, with a connection with a private main, which, in turn, has only one connection with the public main, is a "proper" water supply within the meaning of Section 72. No evidence having been given as to the present position of the eaves-gutters and down-pipes, no decision was given on this point.

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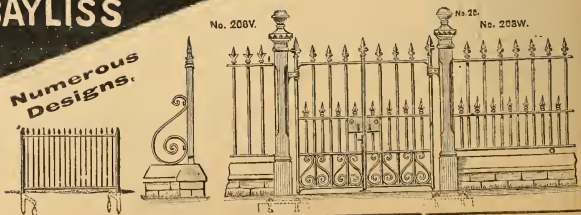
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Every Second Thursday.

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DUBLIN.

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TOPICAL TOUCHES.

A DESPERATE DANGER DEFINED.

Whilst "C. E." and all other experts are disputing over and pointing out the inefficiency and financial loss that may accrue to the city of Dublin from Mr. Hammond's scheme of electric lighting, they have all with one accord apparently overlooked a much greater, more pressing, and far-reaching danger that is in our midst. We mean the question of ELECTROLYSIS.

Now, what is electrolysis? will be asked by the non-technical. Electrolysis, for the purposes of this article, may be defined as the destruction of gas and water mains and subsidiary service pipes by vagrant and wandering electric currents, which currents, taking the line of least resistance, naturally seek the best conductors, and find them in the nearest water or gas main, where at once they commence their work of disintegration. In the gas mains this disintegration takes place from the outside, where the pipe is in contact with the damp earth, and finally the shell of the pipe is eaten away, until it is pierced, whereupon the gas escapes. It must be to the loss of the gas company, in any case, and it may be to the extreme danger of the community, for it may wander into the houses, or it may fill the sewers, according to the position of the pipe destroyed; and then it only needs the infortuitous contact with the sewer-man's lamp, or a light in the house, to produce an appalling explosion, which may eventuate in loss of life or destructive fires. In the case of the water mains, the disintegration proceeds from the inside of the pipe, and the detritus will be removed by the flowing water, and the thinning of the main proceeds until such a main ceases to be able to withstand the pressure, when rupture occurs, and a destructive flood will ensue. This danger is ever present where electric trams are in operation. It has been the subject of many discussions amongst scientists, and in London the danger has been apparently so obvious that we understand that Mr. Livesey, the head of the great London Gas Company, opposed the London Electric Tramways Bill strenuously, because of this ever-present danger, with the result that the Tramway Company undertook to take extraordinary precautions for the insulation of their system. What this precaution exactly is we cannot for the moment define, but presume it is in the nature of a double return. That this danger exists in our midst is undoubted, as we have it on good authority that a well-known engineer in Dublin has found current of as high intensity as 3 volts flowing out of some of the Varrity mains. Would it not be well that some attention was paid to this matter before the results obtrude themselves unpleasantly before us? That we are not altogether sensational alarmists may be shewn by the following extract from the advance proofs of our contemporary, *The (London) Builder*, kindly sent us, and written from a totally different point of view:—

"ELECTRIC LIGHTING REGULATIONS.—By the Electric Lighting Act of 1882 the Board of Trade is empowered to make, amend, or repeal regulations for securing public safety, or for ensuring a proper and sufficient supply of electrical energy. We cannot congratulate those who drafted the amendments issued this week to the old regulations. In the first place, the amendments are an almost unintelligible mass of verbiage, and in the second place we fail to see how they are going to help to secure the public

safety, or to ensure a steady supply of the electric light. So far as we can understand the second amendment, it amounts to this: that the Board of Trade is ultimately to have the power of forcing a consumer to give up his vested interest in a low-pressure supply. If they think it necessary, they can employ a single arbitrator to fix the amount of compensation due for any loss or damage incurred in the changing from low to high pressure. The position of this arbitrator would not be an enviable one, as it is notorious that electricians are at present divided amongst themselves as to the merits and demerits of a high-pressure supply. The Board of Trade cannot be accused of unduly oppressing the supply companies; when their regulations tell against the companies, the penalties are not enforced, and when the regulations favour the consumer, they are amended. If these amendments are legal, then high-pressure supply will become practically universal, and it is to be hoped that inventors will design new systems of distribution, in which there is no danger from shock, and in which no damage is done by leakage currents."—*Builder*.

Although Royalty will not be represented at Ascot this year, it is believed that Ascot week will be as brilliant as heretofore, and will attract quite as many patrons of sport and fashion. House-letting is going on at a very brisk rate, and owners of single cottages are receiving an annual rental for one week's occupancy, whilst the houses in the neighbourhood have all been let at very large figures to well-known leaders of society. Those interested in household property are, however, casting a most favourable eye on the season of 1902, which, it is believed, will mark a record. Houses are being planned and built for this period, and when it is remembered that there are instances on record when tenants have been willing to pay as much as five hundred guineas for a house for eight days and sixty guineas for a cottage for the same period, it will be seen that the speculators, in anticipation of a real Royal Ascot, have good ground for carrying on these works.

Cardinal Vaughan and his household are leaving "Archbishop's House," Westminster, for their new residence in Ambrosden-avenue, Ashley-gardens, S.W. The new residence has been erected east of the new cathedral, and in direct communication with it. The cathedral, the diocesan hall, and the house form one continuous pile of buildings of about 550 ft. in length, occupying the whole length of Ambrosden-avenue, and have all been erected by Messrs. Shillitoe & Sons, of Bury-St.-Edmunds and London, from John F. Bentley's plans. The cost of the diocesan hall and house is close upon £40,000.

It may be taken for granted that the prolonged Penrhyn Quarry dispute and strike has ended. About 2,000 hands are now at work, so that the deadlock has been completely got over.

To whomsoever else the gigantic bubbles of electric lighting and main drainage may bring loss and ruin, to one firm at least it would seem to bring profit. Far from the land of their birth the promoters—along the banks of the sunny Rhine (may be the "Red Rhine Wine" was quaffed), but when the erstwhile Free City of Frankfort was reached, the native wine of Erin's Isle might once again bring joy and gladness to the heart of man, for "Power's Babies" had gone before, and in Frankfort's ancient burgh might freely be tasted. The photograph in the current issue of our contemporary, the *Irish Field*, is, to say the least, engrossing in its interest.



Ardee Union.—CONTRACT FOR LABOURERS' COTTAGES.—

Mr. Denis Roe, of the Lynns, Castlebellingham, was appointed contractor for the erection of a block of two cottages at Salters-town at £260. The plots to be fenced, &c., for this sum. Mr. John Halpenny, of Ardee, was appointed contractor for the erection of a cottage at Anaglog, at £137 10s., and one at Charlestown, at £135, and for a block of two houses at Louth Hall, at £275. Mr. Daniel Clarke, of Ardee, was appointed contractor for a cottage at Stickillin, at £130. Mr. John Rush, of near Carricknacross, was appointed contractor for a cottage at Edmondstown, at £112, and one at Coole, at £117. The consideration of the tenders for the cottages to be erected at Dillonstown, Mooremount, Ballynageera, Toberdoney, Athclare, Ravel, Dunleer, Mansfieldstown and Roodstown, were left over to next Tuesday, in consequence of a mistake of not including the fencing of the plots in the lowest tenders for these houses. The Clerk was directed to advertise them again for this day week, and directed that amended forms of tender to include the fencing of the plots be sent in.

Armagh.—The quantities for the works in progress at the R.C. Cathedral were prepared by Messrs. Patterson and Kempster, and not, as stated in our previous report. The architect is Mr. G. C. Ashlin, R.H.A., Dublin, and the work includes stone groining to the aisles.

Belfast.—PROPOSED ASSEMBLY BUILDINGS.—The plans of the Assembly buildings it is proposed to erect for the Presbyterian Church of Ireland have been prepared by Messrs. Young and MacKenzie.

WAREHOUSES.—Warehouse buildings are to be erected for Messrs. J. Fulton and Co., Limited, on the site of the old "House of Correction" in Howard-street. The contractors are Messrs. J. Henry and Sons, and the architects are Messrs. Young and Mackenzie.

In our notice of works in our last issue we regret to note several printer's errors. Fisherwell Church should have been described as Fisherwick Presbyterian Church, while Mr. J. F. Ebner's initials were in error printed as J. T. Mr. Ebner's representative in Belfast is Mr. Wm. J. Shaw, of Corporation-street, who has increased the already large connection established by Mr. Ebner in Belfast as a reliable specialist in the line of wood block and mosaic floors.

Messrs. Kirker, Greer and Co., whose new premises in progress were also described in our last issue, were erroneously given as Kirker, Green and Co.

Dublin.—The addition to the Presbytery of St. Francis Xavier's Church, Gardiner-street, which has been in course of construction for some time past, is now nearly completed, and will soon pass from the contractor to the community. The new building is erected on a charming site adjoining the present residence of the Jesuit Fathers. It is five storeys high, is 50 feet long by 47 feet in depth, and its internal accommodation is most extensive. In the basement are situated a spacious recreation room for the community, a servants' room, cooks' room, with grocery store, vegetable store, larder, butler's room, pantry, china closet, etc. From the basement upwards there are thirty-five apartments, including a reception room, waiting rooms, parlours, etc. A magnificent library is located on the top floor, having a splendid ornamental ceiling, with beautiful lantern light, this library being 48 feet by 30 feet in length and width. A reading and copying room are also provided, and various rooms and corridors are off the library. The building is constructed of Dublin brick and Ballynocken granite. The architect of the structure is

Mr. Wm. H. Byrne, Suffolk-street, and the builder, Mr. James Kiernan, 100 Talbot-street.

NEW METHODIST CHURCH AND SCHOOL, DOLPHIN'S BARN.—Rev. W. B. Lumley has prepared a booklet showing the historical associations of Dolphin's Barn with the Wesleys, especially with Charles Wesley, the poet, who bought a house in the neighbourhood in 1747, and resided there for over six months. There also he compiled the first methodist hymnbook published in Ireland. One of his own hymns included in the first hymnbook was sung at the ceremony. The church is being built from plans prepared by W. G. F. Beckett, of Dublin, by Mr. John Pemberton, by whom also the schools adjoining, which will be open during part of the afternoon for inspection by the visitors, have been erected. The new building will, it is hoped, excellently fulfil the purposes of an auditorium, while still retaining sufficient ecclesiastical character to mark its use as a place of worship. In general style it will be affiliated to a form of Italian Renaissance applied to some of the smaller churches in the neighbourhood of Venice, but, of course, having such differences of form and detail as are dictated by the special circumstances of the case and exigencies of the site. The motive of the ground plan, which is somewhat complex in form, will not be thoroughly understood until the building is complete, and all seats, rostrum, &c., are in position, as everything is carefully arranged with regard to the position and comfort of speaker and audience and the effectiveness of the choir.

ST. AUGUSTINE'S CHURCH, THOMAS-STREET.—The decoration and carving of the Chapel of the Sacred Heart, which has been in progress for some time past, has just been completed in this church. The whole of the work has been carried out from the designs of Mr. George C. Ashlin, R.H.A., Dublin, and the supervision of the work for him was done by Mr. Thomas A. Coleman. The handsome altar of the Sacred Heart has been executed by Mr. John Early, and is an excellent specimen of sculptor's work. The panels are fitted with rich mosaics.

The important improvement scheme affecting the district known as the Bull-alley area, and which includes the erection of several blocks of artisans' dwellings, has now passed the initial stage, and the constructive work will shortly be put into execution. The scheme has been undertaken at a cost of over £250,000 by Lord Iveagh, who acquired power some two or three years ago by a private Bill to take over the entire district, consisting of some three acres, and lying between the Bride's-alley area, which adjoins it on the northern extremity, and St. Patrick's Park, by which it is bounded at the southern side. The preliminary works in connection with the drainage and levelling of the area have been in progress for over twelve months, and are now nearly completed; and Lord Iveagh now proposes to erect on the cleared area artisans' dwellings, a Rowton lodging-house, and a large recreation hall. Plans for the first four blocks of dwellings, which will face Patrick-street on the west side of the area, have now been prepared, and the dwellings will be begun as soon as the approval of the Corporation has been obtained. The proposed buildings will be five storeys high, and will be of red brick, with gables and cut stone dressings. They will contain in all 118 dwellings and 20 shops, the dwellings being divided into 76 two-room flats, 32 three-room flats, and 10 single-room flats.

Four similar blocks are intended for the eastern side of the area facing Bride-street, and plans for these will shortly be submitted to the Corporation. The architect of these buildings is Mr. Dellisa Josephs, of London, who will be assisted by Messrs. Parry & Ross, architects and engineers, of Dublin. Mr. Dellisa Josephs is a specialist in the erection of artisans' dwellings, and has designed several of the blocks of model dwellings erected in London and elsewhere during recent years, as well as most, if not all, of the Rowton model lodging-houses, one of which Lord Iveagh now proposes to erect as an experiment in Dublin. It may, however, occur to some people that a different neighbourhood might with advantage have been selected for the Rowton lodging-house, as the prices charged would probably be in excess of those which the inhabitants of this district—who belong for the most part to the smaller artisan and labouring classes—could afford to pay. The three improvement schemes covering respectively the Bride's-alley area, the Bull-alley area, and the area

devoted to St. Patrick's Park, will effect a clearance of nine acres in one of the most congested districts in the heart of the city. This is an enormous undertaking, and it is doubtful whether in any other city, excepting, perhaps, London, the clearance of so large a district has been carried out at any one time. The Corporation scheme, which embraces the whole of the three acres north of the Bull-alley area, is, of course, the most forward of the three, nine of the blocks of artisans' dwellings being already completed and almost ready for occupation.

Enniscorthy.—The Post Office authorities have, we understand, taken the old Provincial Bank premises in Enniscorthy as a temporary post office until the proposed new building can be erected. It is estimated that it will take two years before the new building can be erected and equipped, and the temporary premises have consequently been taken for that period. The present post office is certainly most unsuitable and inadequate to the needs of the public, and it is simply amazing how such wretchedly poor accommodation by a great public department was tolerated so long by the people. The ever-increasing revenue from the Post Office department must be enormous, and as the treatment of the officials cannot by any stretch of the imagination be called generous, the least that the public have a right to expect is that proper accommodation be provided in important centres like Enniscorthy. Mr. T. J. Mellon, O.P.W., is the architect etc.

On Monday week Mr. A. D. Price, engineering inspector, Local Government Board, held an inquiry in the Market House, Enniscorthy, concerning the application of the Urban Council for a loan of £2,200 to enable them to erect twenty artisans' dwellings under the Housing of the Working Classes Act, and also a caretaker's house and stabling for three horses.

Kingstown.—The branch of the National Bank at Kingstown, which has been for so many years established in Gresham-terrace, moved a few days ago into their handsome and commodious premises in Upper George's-street. The new bank house is a fine building, not unworthy to stand by some of our city palatial edifices devoted to the same business. In Kingstown it makes a very imposing appearance, and is a great addition to the main street where it is situated, and which is already showing many signs of new shops and houses that the expiration of the leases has involved, and which will in a short time transform the whole of the township.

Omeath (near Newry).—The Fathers of Charity are about to build a new convent and novitiate on a most picturesque site on the shores of Carlingford Lough. The design follows a regular conventual type, being planned on three sides of a quad. In addition to the convent, etc., there will be erected a chapel and detached tower. The architect is Mr. W. G. Doolin, M.A., 12 Dawson-street, Dublin.

Rathdown.—On the 19th inst. the No. 2 Rural District Council will be prepared to receive and consider tenders at their meeting, for the extension and alterations to Killegar Burial Ground, in accordance with the plans and specification, which can be seen at the Clerk's Office on all week days between 10 and 4 o'clock. The Council will also, at the same meeting, let contracts for five cottages according to plans prepared by Mr. Henry Powell.

Wicklow.—We learn that the quantities for the extensive alterations to the Dominican Convent are being prepared by Mr. Andrew Bruntz, of Dublin. Mr. W. H. Byrne, Dublin, is the architect.

Wexford.—The County Council of Wexford have applied to the Local Government Board for Ireland for their consent to the borrowing of one thousand five hundred pounds, for the purpose of repairs and alterations at Enniscorthy District Lunatic Asylum. Mr. W. H. Pigott is Secretary to the County Council, Wexford.



Carlow.—On 2nd July the Carlow County Council will consider tenders for renovating and partially rebuilding Acaun Bridge, Co. Carlow, according to plans prepared by the county surveyor. Mr. R. J. Keogh is secretary to the County Council.

Dublin.—LOCAL GOVERNMENT INQUIRY.—Mr. P. C. Cowan, M. Inst. C.E., Chief Engineering Inspector to the Local Government Board, held an inquiry at the Council Chamber, City Hall, in connection with the application of the Corporation for the sanction of the Local Government Board to loans for the following purposes:—£2,300 for works in connection with the refrigerator at the Abattoir; £3,675 for improving the water supply to the areas added to the city under the Dublin Corporation Act, 1900; £320 for the erection of weigh-houses at Smithfield market, and £200 for the erection of a weigh-house at Kevin street.

Mr. D. Collins, assistant city accountant, was first examined. He said the total margin was £359,587. Of that margin, as regards the old city, the figure was £211,157 os. 3d., and on the added areas £148,429. The consolidated rate on the city was 4s. 10d. in the £1.

Mr. Spencer Harty, City Engineer, explained the improvements contemplated, and produced plans of the works with reference to Clontarf. He mentioned that in that township the Commissioners had laid long branches of small-sized pipes, and did not bother about increasing their sizes when the greater volume of water was supplied. The pipes, in fact, were not capable of delivering the necessary amount, especially as a very great amount of corrosion had set in. He had been obliged to get the pipes cleaned, and even now they were getting the water better supplied than for 20 years before. Under all the circumstances, he considered the total loan applied for should be £4,000.

There was no opposition to any of the applications.

Mr. A. Price, C.E., Local Government Inspector, held an inquiry in the South Dublin Union with reference to the application of the Rural District Council for a loan of £330 for the purpose of constructing sewerage works at Seabrook-terrace, Donnybrook, the area of charge to be the Rural District.

Omagh.—The shortness of the water supply and want of pressure in the town of Omagh have recently been giving rise to many complaints, and the Urban Council consulted Mr. J. H. H. Swiney, M. Inst. C.E., of Belfast, on the advisability of putting down a new and larger main from the reservoir to the town. After a thorough examination of all the circumstances, including gauging the quantity delivered by the present main, Mr. Swiney recommended the Council not to alter it at present, as its discharging capacity is over twice the requirement, but to cleanse and scrape the old distributing pipes in the town, and to extend the main arteries. These old pipes had never been cleansed since they were laid, now over twenty years, and their capacity is seriously impaired by internal corrosion, to which in a peculiar degree the Omagh water gives rise. It may be noted that sixteen years ago Mr. Swiney saved the town a large expenditure by advising against the laying of a second main, and by scraping the existing one increased the then supply four-fold. It is expected his present recommendation will have a like satisfactory result in giving back to the town the pressure and quality due to it, without having recourse to such an expensive expenditure as the laying of a new aqueduct.

Sligo.—On the 22nd inst. the Board of Guardians will consider tenders for plastering and painting works and for alterations to the R. C. Chapel.

The Construction of a Canal to connect the Caspian with the Black Sea is proposed, at a cost of about £4,445,000. The projected canal is to have a depth of 22 ft. and a breadth of 25 fathoms.

THE ENLARGEMENT OF THE CATHOLIC CHAPEL.—The Local Government Board wrote stating that they would raise no objection to the execution of the works recommended in the report of the Visiting Committee. The partition between the Catholic Chapel and the dining room should, however, be properly made and finished off. The Guardians said this would be done.

Wexford.—On 22nd inst. the Committee of St. Iberius' Catholic Hall, will consider plans for new billiard room and concert hall, roof and other works. The architect is Mr. D. E. MacCarthy, of Wexford.

CO. WEXFORD BRIDGES.

COUNCIL AND SURVEYOR—DRASTIC RESOLUTION.

At the meeting of the Wexford County Council, Sir H. Grattan Esmonde, Bart, M.P., presiding, the following resolution, which had been adjourned from last meeting, was considered:—"That having regard to the fact that the county bridges, viz.:—Deepes, Ferrycurragh, and Wexford, have cost for the past five years, £1,106 5s. for maintenance, and to the report of Mr. J. H. Ryan, C.E., that Ferrycurragh bridge would require an outlay of £500 to have it put in perfect order, and whereas Mr. Webster, at the meeting of the County Council on 7th August, 1900, stated that £40 would make the bridge perfectly safe, and on the 8th November that it would take £215 16s. 9d. to do the same work, and also having regard to the fact that Mr. Webster stated to the Committee of Investigation that they would find that the Wexford bridge was in perfect order, though Mr. Ryan states it would take an outlay of £105 to effect this purpose; under above circumstances we are of opinion that he has shown incompetence and neglect of duty of such a character as deserves dismissal. We consider he is not a suitable servant for this Council, and would point to the fact that on the 6th August, 1900, he admitted he was to blame for his neglect of Ferrycurragh bridge, though he gave the futile reason that a great deal of extra work had been put on him for the previous six months. And in view of all these circumstances we recommend the Council to call upon Mr. Webster to resign his position."

Mr. Webster made a statement in reply to the effect that Mr. Ryan had gone out of his way to find fault, that the action of the County Council was shabby, and that, as everyone knows, it arose from the defeat of the County Council on the question of his salary.

After a lengthened discussion, conducted in committee, the following resolution was passed:—"Having regard to Mr. Webster's reply to the foregoing resolution, we hereby call on the Local Government Board to dismiss Mr. Webster from the position of County Surveyor to this county, and as Ferrycurragh bridge requires an immediate expenditure of a considerable sum of money, and as the Council are not willing to entrust this expenditure to Mr. Webster, under these circumstances, we request the Local Government Board to take immediate action so as to enable the Council to appoint Mr. Webster's successor, without delay. And that our secretary be instructed to send a copy of the report of Mr. Ryan, C.E., on the condition of the bridges to the Local Government Board, with Mr. Webster's reply thereto."

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THE ARCHITECTURAL ASSOCIATION OF IRELAND.

The annual excursion will take place on June 21st and 22nd. Members of the Association and their friends will this year visit Cashel (for the famous Rock of Cashel) and Holy Cross Abbey. The programme is as follows:—Leave Dublin (Kingsbridge) Friday next, 6.20 p.m.; stay the night at Cashel. Visit Rock of Cashel and Holy Cross Abbey on Saturday; leave Thurles Saturday, 7.54 p.m.; arrive Dublin (Kingsbridge), Saturday, 10.35 p.m. Coupons for the excursion (for members or friends) may be obtained by members from either of the hon. secretaries or the hon. treasurer, on payment of 18s. 6d. on or before Thursday, June 20th. This will entitle holder to third-class return ticket between Dublin and Gould's Cross, car drives between Gould's Cross, Cashel, and Thurles; bed, breakfast, and dinner. It is expected that a saloon carriage will be placed at the disposal of the members on the train. Members joining the excursion will kindly meet in the booking office, Kingsbridge, at 6.10 p.m., on Friday, June 21st. Tickets may be had on application to Jas. H. Webb, Hon. Treasurer, 15 D'Olier-street, Dublin; Edwin Bradbury, 19 Cambridge-road, Rathmines; or G. F. Beckett, 97 St. Stephen's Green, S., Dublin, Hon. Secs.

VALEDICTORY ADDRESS TO THE ARCHITECTURAL ASSOCIATION OF IRELAND,

May 30, 1901.*

GENTLEMEN—

Can you tell me why it is that I, as the outgoing President of the Architectural Association, should be called upon to address you formally this evening by way of valediction? I see no authority for such a custom in the constitution and bye-laws of the Association, and, certainly, I can see no necessity for its continuance. Our worthy Secretary, who, like myself, retires from the arduous duties of his office at the close of this evening's proceedings, when I appealed to him to omit this item from the agenda, referred me to the annual programme issued at the beginning of the session, in which he pointed out the President's valedictory address loomed immensely large, whilst the mere election of officers for the ensuing year and the other business to be undertaken at this meeting was thrown in haphazard fashion in very small type. "Besides," said he, "the election of officers will not occupy the whole evening, and we must have your address to 'fill up.'" You will observe, therefore, that this additional burden has been imposed upon your President owing to the sterility (or ought I not rather to say, fertility—for you may take it both ways)—of resource on the part of former secretaries. It was but natural that men like Orpen, Pentland, and Sheridan should embrace such an opportunity as the present to hold you by the hour entranced with their golden eloquence. They would not have been true to their Celtic origin had they protested at such an imposition. But I, a poor Sassenach, to whom such work comes somewhat tardily, raise a protest for the sake of those who shall succeed me.

But, gentlemen, although I speak thus, in obedience to the "John Bull" instinct of "grumble, but pay," I am glad to have an opportunity of addressing a few words to you at the close of my term of office. I do not intend to indulge in statistics, or to give you a synopsis of the work of the session—that you will find in due time clearly set forth in the Annual Report. What I wish to do this evening is to offer you a few criticisms and suggestions, which have occurred to me as a result of the experience I have gained of the inner working of this Association during the past year. And, first, with regard to the class work. The attendance generally has been excellent, even above the average, and the students appeared to take considerable interest in the visitors' notes when setting the various subjects, but when, at the following meetings, the drawings were produced for criticism, the results were usually disappointing, not more than, as a rule, one-third of the students who were present at the previous meeting having taken the trouble to study the problem set them. Many of our younger members seem to imagine that by attending classes at 22 Clare-street for a couple of evenings in the week, and by occasionally turning up at a general meeting, they are doing all that can be expected of them, and must eventually become well-educated students. Such an idea is, of course, absolutely foolish! When, some few years ago, it was decided to resuscitate this Association, the committee considered that the best way to promote architectural education was to lay down a systematised form of instruction, not as a substitute for individual effort or independent thought, but in order to direct them in the most useful channels. If the mere attendance at these classes is to be considered the be-all and end-all of an architect's education, then a fixed curriculum will become a source of danger, instead of a help, to the student. The result of such a deplorable *laissez faire* policy was particularly noticeable in the competition in connection with the technical demonstrations. The attendance at these demonstrations was remarkably good, owing to the kindness of the practising architects in granting their assistants and pupils the necessary leave. But, as the committee intimated in the circular which they addressed to the members on the subject of these demonstrations, it was necessary, in order that the demonstrations should be of real practical value to the students, that ample notes should be taken of everything they saw

*Address delivered in the Grosvenor Hotel, Dublin, at the closing meeting of the session, 1900-1, by the retiring President, Mr. Fredk. Batchelor, F.R.I.B.A.

and heard. It stands to reason that unless one is endowed with an exceptionally retentive memory, the impressions one receives during such a course of lectures can be but transient, unless they be fixed by even the roughest of notes taken at the moment, or immediately at the close of the demonstration. I venture to think that very few of those who attended the lectures without troubling to take notes could, at the present moment, pass even a cursory examination on what they then learned. I am glad to say that there were one or two notable exceptions to this general rule, and it gives me great pleasure to especially compliment Mr. Lucius O'Callaghan on the admirable series of notes which he submitted in competition. But, gentlemen, I ask you is it creditable to this Association that not even one tithe of the students attending these demonstrations would take the trouble to note down what they saw and heard, or, at all events, to send in the notes they may have taken for competition? The result will, I fear, be that, should a second series of demonstrations be organised in the future, the architect will not allow their assistants to attend, as they would be only wasting their time. Thus it is that, as Shakespeare says, "Enterprises of great pith and moment with this regard their currents turn awry and lose the name of action." I am glad to turn from this point to a matter which has given the committee great pleasure. I refer to the success of the competition for the institute prize of ten guineas. This evening you have heard the results of the competition, and I most heartily congratulate these gentlemen on their success. We regard such men, who look upon their architectural work as a pastime, who are content to eschew to a large extent the pleasures of golf, hockey, tennis, and what not for the sake of advancement in their profession—we regard such men as the backbone of this Association. But whilst I speak thus, I, of course, admit that the true standard of usefulness in this Association is not the measure of success which attends its various competitions, but rather the steady growth in technical knowledge, and the improved draughtsmanship, which is already discernible in the work of the pupils and junior assistants in this city, as well as in the more intelligent interest they take in their office work. *Apropos* of this, and the risk of your dubbing me a crank on the subject of technical education, I should like to refer to the project which our brethren of the London Association are about to set on foot, viz.—the establishment of day classes for the purpose of providing some elementary training for architectural pupils preparatory to entering upon their office career. You must forgive me for quoting this speech at such great length, but Mr. Webb so accurately expresses the disabilities under which the present pupilage system labours, owing to the want of some such preliminary training as it is now proposed to supply, that I felt I could not do better than give you the exact words of so able an authority on such a question. But, you will say, how does this question affect us in Dublin? Surely it is not proposed that we, with our comparatively small membership and very limited resources, should follow in the wake of the London Association, particularly as the scheme is only at present in the nature of an experiment, in which in their case there is much to be gained and very little to be lost? That is perfectly true, and although the need of such preliminary training exists as much, if not more, in Dublin than in London, still it would be hopeless in our small community to initiate such a movement. However, there is an old adage, "Never do yourself what can be as well or better done by somebody else," which might with advantage be applied to the present instance. During the past session your committee have had informal communication from Colonel Plunkett and Mr. Arnold Graves with reference to the architectural classes in the School of Art, Kildare-street, and the City of Dublin Technical Schools in Kevin-street respectively, and it has occurred to me that if your committee could in any way co-operate with the powers that be in connection with these schools in the furtherance of such a scheme as has been outlined in the curriculum of the London Association, much good results might obtain from the *rapprochement*. The one danger I have always feared in any co-operation of this

Association with either body was lest it might afford a backdoor by which unqualified persons might enter the profession. This danger is overcome if the subjects included in the curriculum be sufficiently elementary, as, whilst being suitable for the tyro and *dilettante*, would not be of such a character as would lead the student to believe that the practical work of the architect's office might be dispensed with. If any tangible and practical scheme could be evolved by which such a preliminary training could be afforded, every practising architect could take advantage of it by saying to the parents, "Let your son study for twelve months at one or other of these schools, so that he may find out whether the work is likely to be congenial to him, and if at the end of that time he is anxious to become an architect, I shall be glad to take him into my office." So much with regard to the education of the younger members. But, gentlemen, we must not forget that this Association of ours exists not merely for the education of the pupil, but also for the mutual improvement of the senior assistant and young practitioner, to whom the Design Club and the lectures at our general meetings have often proved most helpful. I cannot help thinking that it would be a great matter if, during the coming session, some of the fortnightly general meetings be reserved for informal discussions on difficult points, which are always cropping up in the early days of an architect's practice—on different ways of doing things, on the management of clients, on the contrariness of contractors, or what not. Surely, if such discussions could be arranged, unhampered by too many restrictions—save one, that not more than six people should be allowed to speak at the one time!—they would be of great practical assistance to many of us, and would have the additional advantage of inducing some of our more diffident members to open their mouths! Another thought is in regard to the Dramatic and Lyric Club, which project, you will remember, was broached at our last smoking concert. All work and no play makes an architect a dull boy. A good many of us feel we have too much work to do, and I am quite sure that our work will be of better quality, and that we shall feel a greater interest in our Association and in each other if we spend some of our time for recreation as well as that for work in each other's company. On that account, I, for one, should welcome the formation of a sub-committee at the beginning of next session to deal with the matter. Many of our members possess great musical or dramatic ability, and I see no reason why we should not have a most successful club in connection with this Association. And now, gentlemen, in retiring from the chair to which you did me the great honour to elect me, I have again to thank the committee and officers, as well as the members of this Association for that honour, and for your kindness and assistance in enabling me to carry on the duties of my office. I would ask you always to keep before you the high purpose to which the association owes its existence, and to remember that in advancing the education of the future architect you are raising the standard of architectural proficiency, and are consequently enhancing the dignity of our noble profession. Nay, more, for if, as Mr. Bressford Pitt would have us believe, architectural art is but an expression of those influences which go to form national character, you are engaged on work in which the greatest in the land might well be proud to co-operate.

OBITUARY.

In the person of Mr. S. Evans there has recently passed away one of our oldest contributors. For many years Mr. Evans had made Old Dublin his peculiar study. His knowledge of the histories of Irish families was most extensive. Mr. Evans did a solid and lasting work when, in the many series of articles which have, from time to time, appeared in our columns, he collected, annotated, and recorded much of the history of the Dublin of a generation that is gone, for a great deal of his research was in a direction which every year that passes makes more difficult of access and of accurate record. This Mr. Evans has done, and has written down a great deal of the history of the lordly old dwellings of Dublin, which otherwise was in danger of becoming lost.

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"THE WORKMEN'S COMPENSATION ACT, 1897: A PLEA FOR REVISION."

It would, indeed, be difficult to touch upon a subject possessed of greater direct personal interest to the great bulk of builders, contractors, and manufacturers than that of workmen's compensation for injuries. The matter is one so closely touching not alone the sentiments of the employers, but also their pockets, that, interesting as it is, it is difficult to obtain upon it an opinion wholly free from bias one way or the other. The struggle for equitable compensation was a long and engrossing one, and, varied as may be the views held upon a question surrounded by an atmosphere charged, as it were, with electricity, there are few men who will gainsay the principle that workers engaged in arduous and dangerous occupations are entitled of right to due compensation for injuries received in the discharge of their duty. Readers of Charles Reade's masterly novel, "Put Yourself in His Place," have, even after long years, a vivid recollection of the terrible picture he painted of the Sheffield Trades' Unions—the craft and brutality of the Unions, the fiendish cruelty practised in the so-called cause of labour; and, on the other hand, the selfish callousness of the masters, to whom a human life was but an item of capital; to whom rotten, worn-out belting, death-dealing flying grindstones were but incidents of the day. The power of the Unions has since then been curbed, and the masters, too, forced to take a more humane view of the relative positions of master and man.

Old as is the principle of workmen's compensation—for it is said to have been known to the Roman law—it was not until the passing of Lord Campbell's Act, in 1846, that it became possible for a workman's relatives to claim compensation for a death. Of course, a claim lay under common law for *injuries*, but that right being a personal one ceased with the death of the injured person. But in all proceedings under common law it was necessary to prove personal negligence on the part of the employer.

That grandmotherly legislation has led to extraordinary contradiction and absurdities in the laws of the land is self-evident, and the book which forms the subject of these remarks, is devoted to arguments in support of the pleas for a revision of the laws relating to workmen's compensation. While Mr. Thompson sets before us little that is new or that has not before now formed the subject

of newspaper controversy, still he has collected and amplified in a clear fashion the varied arguments in favour of revision. According to the late Home Secretary, the Act when passed applied to about 3,600,000 men in factories, docks, and wharves; to 730,000 in mines; to 465,000 on railways; to 104,000 in quarries; also, to something like 700,000 builders and bricklayers; and 800,000 navvies and general labourers. In all, at least six million workers—a goodly index of the importance of the measure. Not only does the Act apply to places where machinery is used, but it applies to workers in almost every conceivable industry. Contributory negligence on the part of the worker affords the employer no defence to a claim; for *serious and wilful* neglect must be proved in order to make liability—a direct reversal of the principle of the Act of 1880, as are also the clauses entitling men to recover for injuries inflicted upon them by the carelessness of their fellow-workers, while sub-contractors' men may recover from the chief contractor.

The results of this Act, as effecting a change in the lives of the masses, entitles it to rank as one of the most important labour enactments of the century. Still, the Act, from every point of view, is full of imperfections—its obscure passages afford happy hunting grounds for the lawyers, who, while lost in appreciation of the subtleties of legal argument, meanwhile pile up heavy bills of costs. In 1899 *The Times* remarked "that the multitude of appeals arising out of the Workmen's Compensation Act was becoming a matter of grave concern"—for no sooner was one of its more obscure clauses elucidated, and the law laid down, than the next week we find two or three arguments going over the very same ground and using the identical formulae.

Indeed, Lord Davey, in a judgment in the House of Lords, characterised this Act as "an extraordinarily ill-drawn statute." Mr. Pickard, at the Conference of Miners, said that "The Workmen's Compensation Act was one of the worst ever placed upon the Statute Book, and sadly needs amending. The miners must insist upon their Members in Parliament giving more support to the working men's Claims." Surely a remarkable consensus of condemnation! Amongst the extraordinary anomalies of the Act, it is a fact that a clerk or a manager is entitled to compensation, while a carter is not, because he meets with the accident some distance from the factory. A sailor cannot claim for his injuries if they occur at sea. Yet, if unloading his vessel in dock, he comes within the Act—always provided the unloading is through the agency of some crane or other contrivance on land! J. C. Gould, the well-known cartoonist, sums up some of the absurdities of the Act in the following:—

WORKMAN (*minus a leg*).—"What happened to me? Scaffolding gave way, and I fell off the top of the house. Compensation? I didn't get a hap'orth. The lawyers said as how I didn't come within the Act, because the building was only 29 feet 11 inches high."

In its present state the Act seems to be a source of illogical and contradictory decisions which are most perplexing to the lay mind. Both from the point of view of the employer and the workman, it seems to us demonstrated that revision is urgently needed. The employer know not the extent of his liability, while the workman, imagining himself secured, may find himself outside the four corners of the Act. In fact, no one knows how far the measure goes or where it ends.

In dealing with this important question Mr. Thompson has shown a considerable grasp of the subject, which goes to make his little volume, not alone interesting, but of distinct value to every employer of labour.

The Royal Institute of the Architects of Ireland and the County Surveyors.

A SPECIAL meeting of the Council of the Royal Institute of the Architects of Ireland was held at the Institute Rooms, 20 Lincoln-place, on Wednesday, 5th June, Sir Thomas Drew, F.R.I.B.A., the President, in the chair. Also present—J. Rawson Carroll, C. A. Owen, Frederick Batchelor, George P. Sheridan, Charles Geoghegan, William M. Mitchell, and W. Kaye Parry, hon. secretary.

* "The Workmen's Compensation Act, 1897: A Plea for Revision," By R. T. Thompson, Fellow of the Society of Secretaries. London: Effingham Wilson, 11 Royal Exchange. 1901. Price 1s. 6d.

The following resolution was passed unanimously:—"The attention of the Council of the Royal Institute of the Architects of Ireland has been directed to recurring instances in which county surveyors, under the new establishment of County Councils, are engaging in private practice, both in architectural and engineering work. This Council are of opinion that in the interests of the public service it is desirable that the County Councils should avail themselves of the powers conferred upon them by section 115, sub-section 18, of the Local Government (Ireland) Act, 1898, for the purpose of making such arrangements with the County Surveyors as will enable them to devote the whole of their time to their official duties."

It is scarcely possible to overrate the importance to the profession of this very proper if somewhat tardy action on the part of the Institute. That the grievance of the architects in private practice who find their connections weakened and work lost to them through the effective canvassing and excellent business tactics of the County Surveyors are not fanciful grievances, but hard, stubborn realities, which press severely upon the Irish provincial architects and engineers in particular, is manifest. We could name instance on instance, were it necessary, every one of which can be substantiated, but that, we conceive, would be invidious. In this country the Institute of Architects ought to be the leading authority as well as the guardian in matters pertaining to and affecting the interest of professional practice. But most people will admit that the Institute (to put it mildly) has been a rather inactive body—at least up to a very recent period. About a year and a half ago public attention, as well as the attention of the Local Government Board and the Institute of Architects, was directed to the appointments then being made throughout the country by the Rural and Urban District Councils of incompetent men to fill the position of architect to those bodies. The private practice of County Surveyors is not confined to purely engineering works, such, for instance, as waterworks, drainage, piers and harbours, etc.; nothing of the kind. It is a fact well known throughout the country that County Surveyors have been engaged—largely engaged—in private architectural practice for many years past, and that they have taken the advantage which their official position gave them of securing commissions for the carrying out of large and important building works in various parts of Ireland. It will be in the recollection of most professional men—at least those who took any interest in the late Local Government Board Inquiry held in Wexford—that one of the pleas put forward by the County Surveyor was that he has not as much time at his disposal now for private practice as heretofore. Under the late Grand Jury administration County Surveyors have had free rein to do pretty much as they liked, but under the present and more popular control, and with very considerably increased salaries, it would not be too much to expect that these officials should give their undivided attention to the duties of their office. A County Surveyor has the control of the entire public works of a county—works so varied and so numerous as no one man would be capable of discharging single-handed, and, as a matter of fact, County Surveyors are all assisted by two or more Assistant Surveyors paid out of the rates. This fact ought to prove conclusively, if proof were needed, that one man is not capable of discharging the whole of the duties appertaining to the office of County Surveyor, and it seems preposterous to allow an official to devote a considerable portion of his time to private work when the duties of his office are more than he can fulfil without assistance. If he equipped and manned his own office and paid his own assistants, then he would occupy a different position as regards private practice. In directing the attention of the Councils to this matter it would be invidious to give names or particulars. Any person who takes an interest in the question cannot have failed to observe much correspondence in the daily papers and other journals on this subject within the past few years.

Following on the recent action of some members of the Architectural Association who have handed in a notice of motion—"That in the opinion of this meeting of members of the Architectural Association of Ireland, the system under which the surveyors of Irish counties are permitted to engage in private prac-

tice constitutes a serious grievance and injury to the allied profession of architecture and engineering.

"That the hon. secretaries be directed to forward copies of resolution to the Chief Secretary and to the Members of Parliament for the City and County Dublin."

We cannot doubt that it only needs a little vigorous action on the part of the professional societies to bring the County Councils to a sense of the impropriety of their highly paid officers entering into competition with private practitioners. The time too, is very opportune for asking a question in Parliament at the re-assembling of the House.

We, who have always consistently upheld the claims of the surveyors to adequate and even liberal remuneration as a matter of right and justice—as, indeed, did all professional men, now wish every success to this movement to abate an undoubtedly grave professional abuse.

In another column we publish two items of news which will be read with interest as bearing on this controversy, one the report of the interview between the Local Government Board and a deputation of the Council of the Institute of Architects—which goes to show that at last a step in the right direction has been taken by the latter body—the other a resolution of the Wexford County Council calling upon the Local Government Board to dismiss the County Surveyor on the grounds that he had been guilty of negligence in the discharge of his duties. The Council bases its decision on the report of Mr. John Henry Ryan, C.E., who was called in as an independent engineer to report on the condition of certain bridges in the county. The matter being still more or less *sub judice*, we refrain from any comment; but whether the suggestion of the Council is well founded or not, it goes to bear out our constant contention that no one man can indulge in an extensive and lucrative private practice and at the same time discharge the onerous and important duties of a county surveyor. It is with regret that we publish a resolution reflecting on an unquestionably able official who has always held a high position in his profession, but it will be within the recollection of our readers that Mr. Webster, when he appealed to the Local Government Board to force the County Council to grant him increased remuneration, based his claim largely on the fact that the new Local Government Act, by reason of the increased work which it threw upon him, interfered with his private practice. We sincerely hope that even yet an equitable *modus vivendi* may be determined upon by the Council and Mr. Webster. One regrettable feature in the case is that Mr. Webster should have thought fit to reflect upon Mr. Ryan. That Mr. Ryan, one of the most eminent and popular members of the profession in Ireland, and holding the office of vice-president of the Institute of Civil Engineers, would be capable of acting in a partisan spirit, is utterly preposterous. The profession in Ireland knows Mr. Ryan to be not only an able engineer of ability and of great experience in many lands, but also a man of judicial mind, strict integrity, and of the kindest disposition.

"Dublin Architecture,"

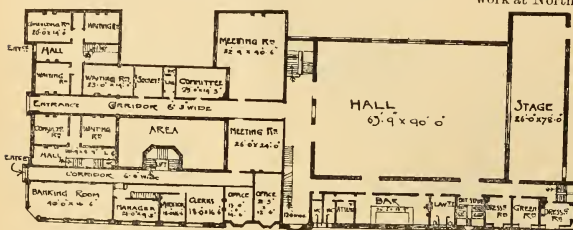
says the *Pall Mall Gazette*, "is almost exclusively classical. Many of the chief buildings—planned in the palmy days of the city when Ireland had its House of Lords, and centripetal force did not attract all its wealth and aristocracy to London—were designed by Gandon, a favourite pupil of Sir Wm. Chambers, but now scarcely remembered according to his deserts. It was he who built the Four Courts and the Custom House, and the record still stands of how sorely he was teased and thwarted by the local workmen. He also made the alterations in the Houses of Parliament which have converted the façade of the Bank of Ireland into one of the most effective classical structures in modern Europe." It is refreshing to note such an appreciation of the truly stately character of the 18th century public buildings in the metropolis of Ireland. As a general rule, the modern daily Press is oblivious of architecture viewed as an art. Note is taken, indeed, when some eminent firm of haberdashers opens a new emporium; the fabric is criticised—save the mark. Few of the general public realise the exceeding beauty of our city, but to the observer returning from other towns and cities the charm of Dublin becomes apparent if he has the smallest grain of artistic feeling.

OUR ILLUSTRATIONS.

CORNWALL BUILDINGS, BIRMINGHAM.

Our illustration of a general view of these buildings, together with our accompanying plan of the ground story, represents a very recent example of well-planned modern offices and chambers.

On the ground floor are a banking chamber and associated offices, with a large concert or meeting hall, with a smaller



Cornwall Buildings, Birmingham, Ground Plan.

hall. On the ground floor, as well as on the upper floors, are suites of rooms, intended primarily for surgeon's consulting and waiting rooms, a departure which seems to be a feature in Birmingham.

It may be of interest to note that one of the upper floors is occupied as a suite of residential chambers by Mr. Harvey Du Cros, junior.

"THE IRISH FIELD."

Last week the *Irish Field* contained an interesting and instructive article on sub-marine vessels. The article goes a long way to demonstrate the utter "cussedness" and bungling incompetence of our Government Departments, the particular department instanced being the Admiralty. The War Office has often been exposed, but the British public fondly hugs to its expansive chest the noble and comforting thought that, be our War Office as dangerous as it may, still, we have at least an Admiralty, and to-day "Britannia Rules the Waves." How far the thought is justified we know not. We are only grateful the Admiralty has experienced no such severe test as the past two years has proved to the War office.

THE EXHIBITION AT THE CARPENTERS' HALL, LONDON WALL.

By far the oldest example of the carver's art is a Miserere seat from the choir of Exeter Cathedral. It is one of a series of 50 made under the direction of Bishop Bruere, who ruled the most Western See from A.D. 1224 to 1244. Every one of these wonderfully well-preserved specimens of early 13th century oak carvings are apparently as sharp and sound as they were the day they were finished. Figures, both of man and beast, are introduced with singular power into the series, which is of exceptional interest, not only for its great antiquity, but also because it contains the earliest carved representation of an elephant in this country. Curiously, the carver blundered in the hocks of the quadruped's hind legs, making the joint like a dog's instead of a man's, as it should be. The exhibited example—which shows a well-displayed group of long and gracefully-stemmed trefoils—has flying birds as the terminations of the seat moulds. During the renovation of Exeter Cathedral by the late Sir George Gilbert Scott, R.A., in 1870, it was found necessary to lessen the number of stalls by one. The present specimen, therefore, has been preserved in the Chapter House ever since; but, at the instance of Mr. Harry Hems, has been loaned for the

purposes of this exhibition by the Dean of Exeter (Dr. Earle, Lord Bishop of Marlborough). Mr. Hems also exhibits eight other west country Misereres of very early 15th century date. They were formerly in the church of the Collegiate Church of St. Michael at Cadbury—a village some three miles from Castle Cary N., in Somersetshire. How these most interesting relics of the past ever pertained company with the edifice to which they belonged it is difficult to understand. They were purchased, about 40 years ago, at the clearance sale of a builder named Clarke, at Breston, some 40 years ago. Clarke used to work at North Cadbury Church.

A small but very interesting article appertaining to the woodworkers' craft, in the shape of an old fret-saw frame, is exhibited by Messrs. Harry Hems and Sons. It bears the date A.D. 1693 upon it, as well as the initials "W.B.," and is believed to have formed part of the kit of one William Bubb—a carpenter who is known to have worked upon the oak panelling, made and fixed a year later in the Exeter Guildhall. Three of Messrs. Harry Hems and Sons' 17 year old apprentices have competed successfully for the prizes offered by the company. Thomas M. Bulcke, wood carver, takes the first prize, silver medal and £5, for an admirable statuette in oak (2 feet high), representing Prince William of Orange. Fred George Knapp, another wood carving apprentice, takes the first prize offered to apprentices of £2, for three large paterae in oak of bold 15th century design, whilst Joseph B. Hoskins apprenticed to the same family as a joiner, is awarded the second prize and bronze medal for a well made library chair, of oak.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

A deputation from the Council of the Royal Institute of the Architects of Ireland waited on the Local Government Board on Friday, the 14th inst. The deputation consisted of Sir Thomas Drew P.R.I.B.A., F.R.I.B.A.; J. Rawson Carroll, F.R.I.B.A.; R. Caulfield Orpen, F.R.I.B.A.; Charles A. Owen, F.R.I.B.A.; and W. Kake Parry, M.A., F.R.I.B.A. Hon. Sec.

The object of the deputation was to bring under the notice of the Local Government Board the appointments of unqualified men as architects by the Urban and Rural District Councils in connection with the expenditure of public funds.

The deputation was very courteously received by the Vice-President, Sir Henry A. Robinson, K.C.B., and other members of the Board.

Sir Thomas Drew stated shortly the position occupied by the Royal Institute in connection with the profession which it represented.

Mr. W. Kake Parry then read a statement embodying the views of the Council, and suggested that the Local Government Board should endeavour to secure increased powers to make regulations regarding the qualifications of architects employed by the Urban and Rural Councils.

The Chairman then thanked the deputation for having brought this matter under the notice of the Board, and added that the suggestions of the Council would be carefully considered.

The deputation then withdrew.

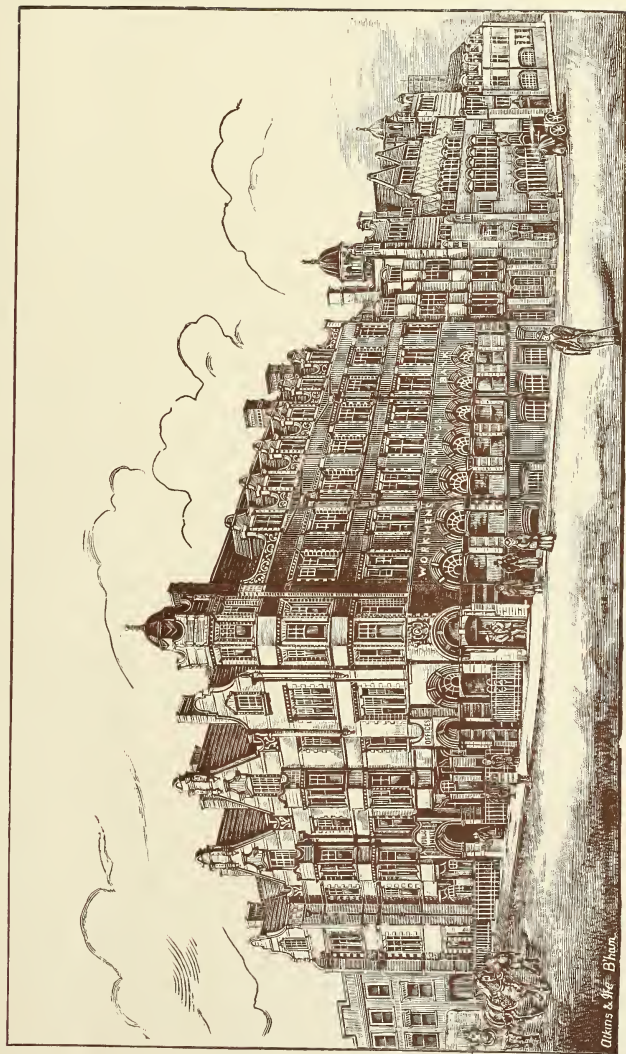
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LAW CASES.

NUISANCE: "OWNER": PUBLIC HEALTH ACT, 1875, SECS. 96, 98, and 104.—In *Broadbent v. Shepherd* (King's Bench Division, Lord Alverstone and Mr. Justice Lawrence, May 2nd), which was an appeal by special case from the decision of the magistrates, the respondent, an agent for the owner of certain houses, had been summoned for failing to comply with a notice served by the appellant (the officer of the local authority) under sec. 94 of the Public Health Act, 1875, requiring the abatement of a nuisance. The magistrates, strangely enough, dismissed the summons, notwithstanding the definition of "owner" in sec. 4 of the Act; but the prosecutor appealed, and the case was sent back to the justices to be reheard. Meanwhile, however, the respondent had ceased to be agent for the actual owner. When, therefore, the case came on for rehearing, the magistrates once more dismissed the summons. The present appeal ensued. The Court held that the case must be again remitted to the magistrates, on the ground that, having had jurisdiction at the date of the original hearing, they ought, when the case was sent back to them, to have made an order for abatement of the nuisance unless it would clearly be entirely nugatory. If the order would only give a personal remedy against the respondent it would be entirely nugatory, as he was now no longer "owner" of the houses. But the order gave more than that. Secs. 98 and 104 showed that the order under certain circumstances would enable the local authority to enter on the premises and do the work itself and charge the expenses on the person liable. The order, therefore, should have been made. Once more, therefore, the case was remitted to the magistrates.

A LARGE BUILDING CLAIM.

In the *Nisi Prius* Court No. 1 (before the Lord Chief Justice and a jury) the case of *H. and J. Martin, Ltd., v. County Council of Antrim* was heard. It was an action for £4,165 2s. 1d. balance due for the building of an addition to the lunatic asylum of the county. The plaintiffs claimed, in addition to the balance due, a sum of £54, for interest, and the plaintiffs pleaded that this was irrecoverable. The defences were traverses. The plaintiffs are the eminent firm of builders in Belfast. The defendants pleaded a set-off of £3,262, for which they allege there was no final adjudication.

Mr. Gordon, K.C.; Mr. Samuels, K.C., and Mr. W. H. Brown (instructed by Mr. J. C. White, solicitor), appeared for the plaintiffs.

Mr. Harrison, K.C.; Mr. Hume, K.C., and Mr. F. Grier (instructed by Mr. Grier, of Ballymoney, solicitor), appeared for the defendants.

The case had proceeded some length, when counsel conferred, and agreed to leave the matter of interest to his lordship.

His lordship reduced the claim of interest to £10, and gave judgment for the plaintiff for £4,075 2s. 1d. and costs.

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DUBLIN ELECTRIC LIGHTING.

MORE STARTLING DISCLOSURES!

Another Letter from "C. E."

TO THE EDITOR OF THE "IRISH BUILDER."

Sir,—I see another act in this "comedy of errors" is being played, and the specification for the "transformers" is being advertised and tenders invited. This carries out my views expressed in my letter of the 28th ult., that the champions of the scheme desire to enter into as many liabilities as possible before being pulled up, and that if they only incur sufficient indebtedness to swamp them individually if "surcharged," that then, to save the citizens, the Treasury will grant the loan. It may be so, but I have my doubts that the Treasury would wink at such a proceeding. The Corporation have succeeded in getting the period of repayment extended beyond the 25 years originally allowed to 35; but this only subject to the Treasury granting the loan at all. What this means is that this city will have to pay somewhere about £11,864 per annum for that number of years to redeem the loan; while if the Corporation issue stock for the £254,500 (and this would be manifestly unfair to those who purchased the present stock at

prices varying from £111 to what it now stands at, for it would at once depreciate the value of their present security), the yearly amount for sinking fund would be £12,693 3s. 9d., and this would mean an actual addition to the original amount to be paid of over £29,000!—a sum not to be despised, especially when within the past few days a deputation of members had to wait upon the Governors of the Bank to beg on their knees for a sum of £25,000 to enable them to carry on business and save their credit. By the way, the deputation was very curiously constituted, as there were amongst the body units who had no apparent right to be there, while other units whose presence I should have imagined to be essential in all matters of finance, were absent. What was this £25,000 for? Was it to pay the instalments of the outstanding loans due the 1st day of last May, or because the Local Government Board addressed a letter on the 4th inst. to the Town Clerk re the loan of £254,500, and in which, I understand, the Local Government Board remark that "when submitting the case to the Lords Commissioners of His Majesty's Treasury it will be their duty to refer to the facts of such default having occurred, and their lordships will no doubt consider the matter in its bearing on the question of the sanction of the loan." Surely, if default is being made now, what will happen in the future if this further burthen of £254,500 (and extras) be imposed? There is one answer, and that is—increased taxation, which must eventually prove too heavy for the citizens to bear, or the alternative of the city being inefficiently attended to, and consequently a state of things occurring which I should be very sorry to contemplate. As it is, matters of importance are being left rest to prevent the swelling of the rates, which rates, if struck to only meet the requirements of the city, would certainly represent half a crown in the pound more than we are paying at present! When will the ratepayers look after their own interests, instead of leaving them in the hands of a body of amateurs?—Yours, &c., C. E.

June 8, 1901.

OUR BELFAST LETTER.

We owe our readers an apology in respect of "Our Belfast Letter." This letter, which appeared in our last issue, was intended for the previous number. Arriving too late for insertion then, it was held over and inserted without any correction being made in regard to several contracts then stated to be open. We regret if this oversight has been in any way misleading to our readers.

REVIVAL OF AN IMPORTANT DUBLIN INDUSTRY.

We are glad to note the efforts now being made to revive the important industry of shipbuilding in the port of Dublin. For years past that industry has been practically extinct in our city. There is no earthly reason why, given energy and enterprise, Dublin should not rival Belfast in shipbuilding. The port is favourably situated, much shipping enters and leaves, and an important general import trade is carried on. Why should we not build some at least of the ships that carry our trade?

Important and influentially attended meetings have been held, and things on the whole look bright for the project.

ROYAL SOCIETY OF ANTIQUARIES OF IRELAND.

A general meeting of this Society will be held in Galway on Monday, 1st July. The proceedings will commence at 8 o'clock in the evening in the Railway Hotel. The papers to be submitted include the following:—"The Shrines of Inis-na-Ghoill, Lough Corrib," by the Very Rev. Jerome Fahey, P.P., V.G., Hon. Local Secretary, South Galway; "The Antiquities of Ballinskelligs and St. Finian's Bay, Co. Kerry," by P. J. Lynch, M.R.I.A.; Fellow, Hon. Provincial Secretary; "Askeaton and its Franciscan Friary," by T. J. Westropp, M.A., M.R.I.A., Fellow, Hon. Provincial Secretary; "Occupation of County Galway by the Anglo-Normans after A.D. 1237," by H. T. Knox, M.R.I.A., Fellow; "The Round Tower of Killebannan, County Galway," by Richard J. Kelly, B.L., Hon. Local Secretary, North Galway; "The Ogam Inscribed Stones from the Royal Irish Academy's Museum," by Principal Rhys, M.A., D. Litt., Hon. Fellow, Professor of Celtic, Oxford University.

WHAT THEY SAY!

THE "IRISH BUILDER."

This well-known old Dublin journal, which has for many years been devoted to architecture, archaeology, engineering, contracting, arts, and handicrafts, in its issue of this week contains several articles of much public interest, perhaps the most important of which is a novel and interesting public health case—the Pembroke Urban District Council *v.* Whitty—heard recently before Mr. Swifte, and specially reported for the IRISH BUILDER. From a sanitary point of view this article will attract much attention from builders and from owners of house property. Copious building notes of interest to architects and contractors are given from many parts of Ireland, church edifices being largely dealt with. Engineering news is also given, and altogether the issue is up to a high standard of excellence. The new proprietors of the IRISH BUILDER are the *Irish Wheelman* Printing and Publishing Company (Limited), 11 Lower Sackville-street, and they are certainly throwing great energy and ability into its production. It is published on every alternate Thursday at a penny, and worthily upholds the best traditions of its long career. Both the IRISH BUILDER and the *Wheelman* are admirably printed.—*The Irish Times.*

At the Navan Board of Guardians the following instructive criticism on the IRISH BUILDER was made:—"Mr. A. Scott wrote enclosing plans and specifications of the improvements that are about to be carried out on the workhouse premises and asking the guardians to advertise for a contractor. Mrs. Everard proposed that a contractor be advertised for. They should not allow all the summer weather to pass without carrying out the improvements. Mr. Cooke seconded. The resolution was adopted, and the question arose as to what papers the advertisements would be given. The Chairman said they should be given to the local papers and some of the Dublin papers. Mr. Owens—What Dublin papers? Mr. Cooke—Which is the United Irish League paper? Mr. Owens—The *Irish Times*, Mr. Cooke (laughter). Mrs. Everard asked was there no building paper published in Ireland. The Chairman said there was one. It is only published periodically. It dies out for some time and is again brought to light. Mr. Maguire—It is like the *Meath Reporter*. It takes fits (laughter). The other business of the board was routine."

[We have written to say that we are happy to state that we are alive—very much alive—never were healthier in our half century's life, and our circulation excellent, while we don't suffer from fits.—Ed. I. B.]

BOOKS RECEIVED.

(TO BE REVIEWED IN OUR NEXT ISSUE.)

THE GEORGIAN PERIOD; Being Measured Drawings of Colonial work. Parts VII. and VIII. New York: *The American Architect and Building News*, 1900.

WEIGHTS AND MEASURES OF SHEET LEAD. By James Alexander. London: E. and F. H. Spon, Limited, 1901. Price, 1s. 6d.

THE ENGINEER OR ARCHITECT AS ARBITRATOR BETWEEN THE EMPLOYER AND THE CONTRACTOR, &c. By Charles Currie Gregory, C.E., Barrister-at-Law. London: William Clowes and Sons, Ltd., 7 Fleet-street, 1901. Price, 12s. 6d.

COLEMAN'S ARCHITECTS' AND ENGINEERS' PRICE-BOOK. London: E. and F. H. Spon, Limited, 1901. Price, 5s.

BACK LANDS AND THEIR INHABITANTS. By Peter Fyfe, Chief Sanitary Inspector, Glasgow. Glasgow: Robert Anderson, 142 West Nile-street, 1901.

The Largest Palace in existence is that of the Vatican which contains 11,000 rooms. Additions to be shortly carried out will add another 1,000 rooms. There are to be three new buildings, one containing 800 rooms, which will be used for housing the pilgrims who visit Rome, while the other two buildings will be added to the Vatican Museum.

OUR CORK LETTER.

(FROM OUR OWN CORRESPONDENT.)

Electric Tramways, &c.

The annual report of the Cork Electric Tramways and Lighting Company, Ltd., shows a decided increase in the takings for 1900 over 1899, total receipts being £32,858, and working expenses £21,488. These receipts show an increase for the year for traffic of £1,774, and for lighting of £4,178. The company has during the year expended £18,000 on additional cables to meet the increased demand for lighting. They have doubled portion of the tram lines in the city and opened the extension to Sunday's Well, and also from Ballintemple to Blackrock, and have also purchased five new tram cars of increased size and improved design.

The price charged for lighting is very moderate compared to the cost of electric lighting in other cities, as the company's powers limit the price charged to 4½d. per unit. The Queens-town lighting is now in working order, but as yet has not shown any earning capacity.

The Cork, Blackrock, and Passage Railway Extension Bill has passed the second reading in the House of Lords, so there is every hope of its getting through Committees and the House of Commons without any great delay.

Cork Exhibition, 1902.

The Cork Exhibition, 1902, has now got beyond the preliminary stage, and a good sum of money has already been promised towards its support.

The Agricultural and Technical Education Department of Ireland has subscribed £5,000 towards the funds, but reserve the right of controlling the expenditure of this sum in whatever way they may deem to be of the greatest benefit to technical education.

The Russian, Canadian, and Irish Pavilions which are at present forming part of the Glasgow Exhibition are to be lent to the Cork Exhibition.

The Executive Committee have not yet decided on the site for the buildings, and will not do so until the deputation, who are at present visiting Belfast, and from there intend to go on to the Glasgow Exhibition, return, as the experience they will gain at Glasgow will materially assist the Committee in deciding on a suitable site.

Town Hall.

There is a proposal to build a Town Hall in Cork. The Council gave the City Engineer instructions to prepare designs and estimate the probable cost. He considered that the cheapest structure they could put up would cost about £14,000, and that £50,000 could be easily spent on such a structure. The whole matter has caused some very lively discussions at the Council meetings, as some members are entirely opposed to the expenditure, as they say that £14,000 is not a sufficient amount for a Town Hall for Cork, and they consider that the present is an inopportune time for the expenditure of such a large sum as £50,000.

Other members say that if they construct the Town Hall now, and embody it with the Great Hall of the proposed Exhibition, 1902, that by so doing a good sum of money will be saved to the ratepayers. This entirely depends on the site for the Exhibition behind the Municipal Buildings being chosen, so until the site is fixed one way or the other the whole matter must remain in abeyance.

General.

The Corporation Baths and Washhouses will be opened to the public in about a month. The contract for the laundry machinery, including all the shafting and engines, has just been given to Messrs Summerscales and Sons, Ltd., Keighley.

The Local Government Board has sanctioned the loan of £20,000 for the purpose of converting the Youghal Industrial School into an auxiliary asylum for harmless lunatics. The plans and specification are practically ready, so tenders ought to be advertised for at an early date.

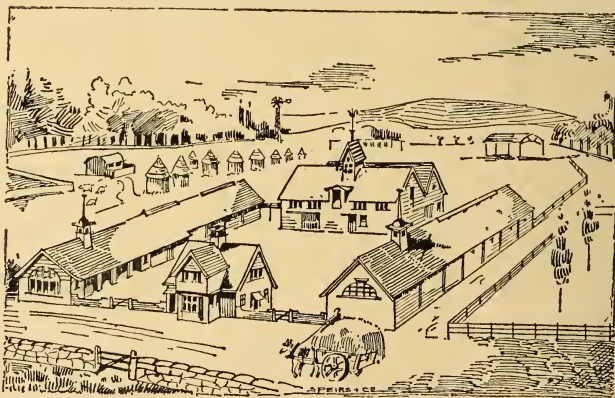
Messrs. Lunham Bros. are now getting further extensions made to their premises, and are having a new boiler-house and chimney shaft constructed, and have just put in a new Lancashire boiler 28' 0" long and 6' 6" in diameter, which has been supplied and fixed by Messrs Yates and Thom, Blackburn, and fitted with Brookes' patent furnaces.

LIGHT, INEXPENSIVE BUILDINGS.

There is probably no subject of more general interest to the public than the erection of buildings of a light and inexpensive nature, but of such a character as to render them habitable, fairly durable, and, at the same time, of good external appearance. With the object of gathering some little information of modern and up-to-date methods employed in such constructions which might be of general interest and helpful to our readers, we have devoted ourselves for some time to a careful examination of the subject. Nearly 50 years ago, with the advent of galvanised corrugated iron as a covering for buildings of a light nature, the use of such became, and even now is very general, so much so, that when one contemplates the erection of an inexpensive structure this particular material is the first that occurs to one's mind to employ to obtain the desired result, and at the present moment the trade in such is very great, many firms devoting themselves entirely to the manufacture and erection of iron buildings, and this is the class of structure we find that still holds the field with any claim to being of an economical nature. The term "iron building," however, is slightly a misnomer, as really such structures are of a composite com-

posed to weather in such a moist climate as ours requires attention and consequent outlay on up-keep, so that, giving the conductivity of an iron covering being got over, and a somewhat artistic style of treatment adopted to take away the cold assertiveness and temporary look attaching to such a covering, iron sheeting, in our estimation, is still the best material for buildings of a light and inexpensive nature; and since now, or, at least, within the last few years, an improved patented system of construction in such buildings has been introduced and extensively adopted, and which, from the unassailable testimony before us, and the number and magnitude of the buildings carried out on this system for every conceivable purpose—from a hut to a bungalow, and from an hospital to a sanatorium, goes far to prove all that the patentees claim for their construction, viz.—"Absolutely impervious to the fluctuations of temperature from materials which have hitherto, in this direction, proved most refractory, and that without adding to the cost from ordinary methods," there should be a still greater field and a new era for the general use of such structures. The firm who are the patentees and manufacturers of these particular composite iron and wood buildings is Messrs. Spiers and Co., 125 West Regent-street, Glasgow, and also of London, who devote

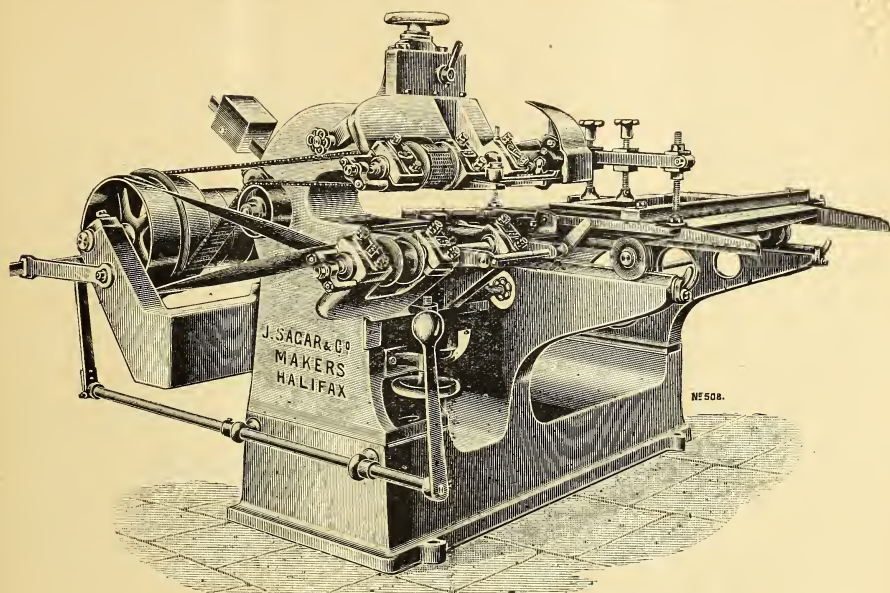
GLASGOW INTERNATIONAL EXHIBITION.



Bungalow and Farm steading on model lines, designed and erected by Messrs. Spiers & Co., Glasgow.

position, and usually consists of a wooden framework, to which is attached externally the galvanised corrugated iron sheets; hence the name. Under the iron sheeting there is usually a layer of non-conducting felt, and the interior of the framework is usually lined with tongued and grooved match boarding, which is stained and varnished, or painted. Many substitutes, we understand, have been tried for an exterior covering in place of the iron sheeting, but either from the lack of durability or expense none of these substitutes have ever come to stay, and we find that corrugated iron is still universally used. Early methods of constructing such buildings, however, were not a success, as the conductivity of the iron rendered them very subject to the fluctuations of temperature, and from this drawback alone they gained an enviable reputation, which nearly outweighed consideration of their economical qualities. Many attempts were made by inventive minds to overcome this objectionable feature, sometimes by very elaborate arrangements, even to solidly packing the intervening space between the outer and inner coverings with sawdust and like material, but with very poor success—in fact, the sawdust packing led to the harbouring of vermin, such as mice, etc., and other arrangements had such poor results, and added so much to the expense as to defeat the primary object of economy in the adoption of such buildings. Wood weather-boarding for a wall covering has been frequently and largely used instead of iron, but wood

themselves entirely to the designing, supply, and erection of their inexpensive and "really habitable" structures in all parts of the United Kingdom and abroad. Their improvements and patents are based on a simple and well-known fact that air spaces are nature's own non-conductors, and taking advantage of this, by a simple arrangement of the framework and the use of a highly non-conductive felt a formation of air spaces is obtained, with such good results as to entirely revolutionise the "habitable" qualities of such structures, and that at no greater cost than the old-fashioned methods, and which entirely removes their buildings from the category of "shells," which one has been wont to opprobriously term the "ordinary" iron building hitherto in use whenever mention was made of the name. Another great feature—in fact, another revelation to us, is the character and appearance that Messrs. Spiers and Co. impart to the exterior of their erections. Those that we have seen, and the many beautiful illustrations we have examined of the hundreds of buildings erected by this firm is a pleasant treat in itself, and at a glance one can almost determine what each particular structure has been intended for, so speaking an outline of the purpose for which they are used is thrown into the general features. Hospitals, sanatoria, churches, halls, schools, and even asylums of great size and magnitude bulk largely in their portfolio and bear an enhanced value from the fact that they are all views of buildings actually carried



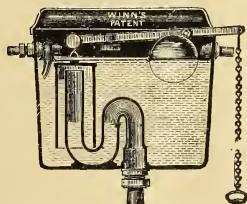
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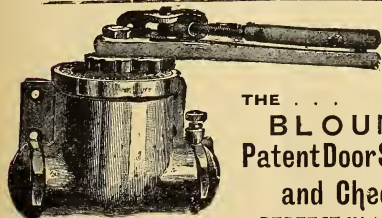
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out, and the congratulatory letters shown us from the highest medical authorities, corporations, public bodies, etc., bear out the claim made that in the matter of comfort this type of erection can be maintained at an equable temperature under any climatic condition, with the greatest of ease. In fact, the Local Government Board (Scotland) approve of their hospital erections, not only from an efficiency point of view, but recognise them as permanent erections in the matter of granting loans on same, thus fixing beyond a doubt their superior qualities also from a durability point of view. For originality and quaintness of design we have seen nothing to equal some of the views of their shooting lodges, bungalows, club-houses, etc., erected in every part of the Kingdom. To those who intend visiting the great Exhibition at present being held in Glasgow, one of the most interesting features to see (not excepting our own national exhibit, the Squireen's House) is the Farm Steading, Bungalow, and Working Dairy, designed and erected by Messrs. Spiers and Co., to illustrate their specialities in iron and wood building, and to show off this style of economic erection for farm buildings. We give an illustration of the Steading, which takes in about an acre and a-half of ground, and is of a square formation. Surrounding the yard are situated the barn, granary, food store, gig house, engine room, and boiler house. A covered way on the left connects with the cow byres (large and small), the calf pen and the working dairy. On the opposite side of the court is the stabling accommodation, the harness room, and the cart and implement sheds. All departments are fully equipped with implements and machinery in motion. Butter-making is demonstrated in the working dairy. The double-story dwelling-house, comfortably furnished, occupies the front of the yard facing the entrance, and is a beautiful specimen of the small houses and shooting lodges Spiers and Co. erect throughout the country. We strongly recommend everyone contemplating the erection of temporary or even permanent buildings of a light, inexpensive, and comfortable nature to approach Messrs. Spiers and Co. before fixing their contracts, and as a parting word we may say that, seeing the erection of sanatoria for the treatment of consumption has become a public and clamant necessity, and into which enters the vital question of speed and economy in the providing of such institutions, that this particular building comes at the psychological moment, especially when one considers and has every reason to hope that within the next fifteen or twenty years consumption will be a disease of the past; so that to erect expensive stone and lime erections would be a needless expenditure, the example set us by all the famous Continental sanatoria, the birthplace of this treatment, in adopting buildings somewhat of this type being a further argument in favour of our suggestion.

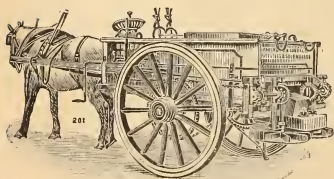
The Illumination of the Niagara Falls by electric search lights during the forthcoming summer is proposed.

The First Stone Church in England was erected at Lincoln, and was thought a great curiosity.

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CONTRACTS.

DUBLIN PORT AND DOCKS BOARD.

TENDERS INVITED FROM MASTER BUILDERS.

The Dublin Port and Docks Board is prepared to receive Tenders for Pointing and Repairing portion of the Walls of the old Tobacco Yard Stores in the Custom House Docks. The Specification can be seen at the Office of the Engineer of the Board, John P. Griffith, Esq., East Wall, Dublin.

Sealed Tenders, marked on the outside of the envelope "Tender for Pointing," must be delivered by post, prepaid, and addressed "The Secretary, Port and Docks Office, Westmoreland-street, Dublin," on or before Tuesday, the 25th of June, 1901.

(By order)

N. PROUD, Secretary.

Port and Docks Office, Dublin.

15th June, 1901.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

JAMES COLEMAN, M.R.S.A.I. (Southampton).—Many thanks for your communication. It was the very first intimation we received.

A. SCOTT, Architect.—Many thanks for communication.

J. J. MEAGHER, Architect.—Thanks for yours. We shall endeavour to follow out your suggestion.

—: O:—

What is the Best Cure for "Dry Rot" in Timber?—There are no means of restoring rotten timber to a sound state, and the dry rot can only be cured, as it is called, by removing the decayed and affected parts, clearing away all the fungi, and destroying the vegetating principle. For this purpose a strong solution of iron, copper, or zinc is used; this, with the admission of a large quantity of air, is very advantageous. Many persons have written on the subject, and the nostrums proposed are as numerous as their authors. But no means of checking the evil can be depended upon except that of removing the corrupted and contagious matter, and admitting a free circulation of air. Much may, however, be done to prevent dry rot by cutting the timber in winter, and properly seasoning it by steeping in water for some time, and then thoroughly drying it before it is used in building. Some timber merchants steep the wood in "petrol" or "rock oil" for some time, and so render the ligneous fibre insoluble, i.e., incapable of absorbing moisture. Mr. Forsyth, in his treatise on the management of trees, gives the following remedy:—"Take one bushel of fresh cow dung, half a bushel of lime rubbish of old buildings (that from the ceilings of rooms is preferable), half a bushel of wood ashes, and a sixteenth part of a bushel of pit or river sand; the three last articles are to be sifted fine before they are mixed, then work them altogether with a spade, and afterwards with a wooden beater, until the stuff is very smooth, like fine plaster used for the ceilings of rooms, and apply it to the affected parts after having them thoroughly cleaned." One of the most successful remedies appears to be that of Mr. Kyan, called *Kyanising*, in which a solution of corrosive sublimate is introduced into the pores and cells of the timber by means of an air-pump. The salts of mercury have been found to be more unfavourable to the development of fungi than any other chemical substances.

The house and estate known as "Lallah Rookh," Muswell Hill, is about to be handed over to the builders, plans having been passed by the Hornsey District Council for the construction of a road and the erection of houses. The cottage in which Moore wrote "Lallah Rookh" will disappear. He finished the poem in 1817, and received £3,000 for it; but in the same cottage his daughter died. She was laid to rest in Hornsey Churchyard. The grounds were well wooded, and contain a small lake.

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NOTES ON ROAD CONSTRUCTION.

(A paper read before the Institution of Civil Engineers of Ireland, by Mr. R. G. ALLANSON-WINN, on the 15th May, 1901. The President, Mr. GLOVER, in the Chair.)

(Continued).

It is unfortunate that so many classes of stone which in texture and quality are admirably suited for building purposes should come out of the quarries in such bad shape and require so much dressing before fit for the mason's hands. Of such are most of the igneous rocks, granite and trap. These are for the most part extremely dense in texture, and the traps especially come out in angular, irregular pieces, with probably only one available bedding surface.

Dalkey Granite.

Certain of the rougher kinds of granite disintegrate very readily, and should be avoided in almost all work—they should certainly be discarded for metalling since they soon pulverise. Much granite of this description is to be found near Dublin at Dalkey, and elsewhere.

Slate.

Slaty formations often produce good material for masonry; the flatness of the layers forming excellent bedding surfaces. The stretchers are easily dressed, but the headers, unless sawn or well chiselled, present a rough, jagged surface, not, however, unpleasant to the eye or detrimental to the strength of the work. It is hardly necessary to remark that the stones should be laid in beds parallel to the splitting grain and on no account at right angles to it. In masonry stones should never be laid, as they are in pavements, on edge. From this faulty construction much damage may arise. When the stone, for appearance sake, and in order to present a fine large surface, is laid on edge, water is apt to get in between the layers, then a frost comes, and expanding the film of water splits off a flake of the material. This cannot happen if the stone is laid with its layers parallel to the beds of the courses.

The Old Red Sandstone.

In the old red sandstone formations many excellent building qualities are to be found, and, as a rule, the deeper you get into the quarry the better and larger are the blocks obtainable. Many of these sandstones are extremely tough, and the work of dressing them is far harder than it is in the case of more brittle, though possibly closer textured stone.

Certain of the lighter qualities of the sandstone are so apt to crumble that, though they are easily dressed, and sawn into various shapes and sizes, they are not to be recommended for outdoor work. They are very absorbent, and consequently weather very rapidly in any climate subject to great alterations of temperature.

Very porous stones should be avoided since they readily absorb moisture, and suffer badly in frosty weather.

In Kerry the old red sandstone formation predominates, but there is also abundance of excellent limestone, and for ornamental work on buildings, the contrast between the delicate pink of the sandstone and the pale blueish grey of the limestone is decidedly pleasing. Aghadoe House, Killarney, affords an excellent example. The house itself is built from the Glenbeigh quarries of old red sandstone, whilst the quoins, window-sills, etc., are of limestone from the Killorglin neighbourhood.

The chisel marks in the stone show as sharply to-day as they did when the house was built 70 years ago—indicating that there has been practically no weathering, and demonstrating the excellent character of the finest old red sandstone for building purposes in the country.

Metalling.

When arranging or the metalling of any important road it is necessary to use great care in the selection of a suitable stone, for upon this will depend to a large extent the annual bill for maintenance. Unfortunately the individual to whom the choice depends is not always in a position to put his hand on the best possible material; he has to use what he can get in the country through which his road passes. The material of which the soleing or lower layer of metal is composed does not so much matter, as it is not intended for wear and tear, and so long as it fulfils its functions of affording a good sound bed and preventing any of the

metal from slipping through, and being lost in the earthwork, nothing more need be expected or required from it, for those in charge of the maintenance should make it their duty to see that fresh metal is always put down in ruts, or where the surface of the road is being worn thin. No cart wheel should ever reach the soleing.

It may be roughly stated that any good sound stone or even hard slate broken in sizes about as large as an ordinary brick, or slightly smaller, will do very well.

Where brick kilns are numerous and extensive, there is usually a considerable quantity of clinker or over-burnt bricks which form an excellent substitute for stone in soleing. The colour of this is nearly always deep red, and where vitrification has been complete, it is often black. Bricks which are thus over-burnt are of course almost indestructible from their extreme hardness, and the chief objection to their being used in the best masonry is that they are usually very misshapen or cracked.

That there should be no waste it is here suggested that all such over-burnt bricks as cannot be utilized in masonry should be used instead of stone in the soleing.

With regard to the top surface or true metal, the case is very different. A hard, heavy class of stone is required to withstand the constant wear and tear of many wheels and hoofs. Such stone is found in the igneous rock formations. Trap rock and good quality of granite fulfil the conditions admirably, and both break into sharp angular nodules well suited to binding, and forming a compact surface when finally watered and rolled with the heavy steam rollers which should be used to finish off the work. Soft sandstones and slaty shales are amongst the very worst kinds of stones, and should never—if it can be avoided—be used for the surface metal.

Limestone.

Limestone makes good binding metal, and the author has seen many excellent roads metalled with old red sandstone, which answers well enough, if of good quality, and where the traffic is not too heavy, and where the maintenance is well looked after. It must be remembered, however, that all sandstones, though often admirable for building purposes, are very apt to powder and blow off the road in dry weather, and turn into thick mud in wet weather where the wheel traffic is at all heavy.

If stone—say sandstone—is very plentiful close at hand all along the line of your road it will be cheaper to metal with that material than to incur the cost of carriage of a better quality of stone from a distance; for, though in the latter case you may get a better surface to start with, you will find that repairs are almost certain to be carried out with the local stone, and that, after a few years, you will have practically a sandstone road, and you will then feel that you wasted money on the original construction. Of course it goes without saying that the softer the metal the more sharply you should look after the maintenance contractors.

Bogs and Swamps.

Where the bank runs across heath or marsh land, and in all places where the banking is soft, it will be better to have the soleing broken slightly larger than it is on the level or in the cuttings.

(To be continued.)

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Waterford.—The large additions to the Convent of the Good Shepherd, Waterford, have now been disposed after competition. Messrs. John Hearn & Sons, of Waterford, have secured the contract at £11,285. Mr. W. H. Byrne, of Dublin, is the architect. Mr. D. W. Morris prepared the quantities.



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HEAD OFFICE

JULY 4, 1901.

11 LOWER SACKVILLE ST.,
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

The premises of Mr. Ballan, builder and contractor, Belfast, have been destroyed by fire. The damage is estimated at £4,000.

More attention should be paid to the American definition of an engineer as a man who can accomplish with one dollar work which any fool could do with two dollars.

The sanitary—or, more correctly, unsanitary—condition of many of our Dublin primary schools is such as to cause speculation as to how great a share they have in the responsibility for Dublin's high death rate.

All the bricks used in the additions to the Jesuit Presbytery, Upper Gardiner-street, Dublin, are the manufacture of the Dolphin's Barn Brick Company, Ltd., who, we are glad to hear on all sides, are doing so brisk a trade as hardly to be able to cope with the orders received.

The Architects' Benevolent Society has just published its annual report and list of subscribers for 1900. The charity is a most deserving and unostentatious one, doing an excellent work, and worthy of the support of the architectural profession. During 1900, £790 3s. was expended in relief.

The monument erected to the Great Elector in the Naval Academy Park, Kiel, was unveiled on the 20th June with much ceremony, in the presence of the German Emperor and Empress. His Majesty delivered a speech, reviewing the life of the Great Elector, and holding it up as an example to the present generation.

Another Clerk of Works is about to be appointed for the extensive new barracks at the Curragh Camp. The salary is £182 a year, and the appointment will last a long time, as it is expected it will take a million to complete the reconstruction scheme. About thirty or forty civilians are employed in the offices, and a thousand workmen outside.

We learn that the London Architectural Association has selected Cirencestre as the centre for this year's annual excursion. The district is a capital one, the stone manor houses of that neighbourhood being excellent for purposes of study. The week's tour will start on the 22nd inst.

Architects are proverbially bad business men (at least, so outsiders say), and chiefly for their edification Mr. W. Kaye-Parry, M.A., has written an excellent treatise on "Office Management," which contains many admirable precepts for doing things "decently and in order." The publishers are Messrs. Spohn.

The late Mr. Allingham, wine merchant in Capel-street, Dublin, has left the Most Rev. Dr. Walsh, Archbishop of Dublin, the large sum of £150,000 towards building a Roman Catholic Cathedral for the Diocese of Dublin, in place of the present pro-Cathedral.

A beautiful cross will shortly be forwarded to South Africa for erection over the grave of Prince Christian Victor in Pretoria Cathedral burial ground. The cross and kerb are

of Balmoral granite from the Royal estate. Around the cross, upon the kerb is a railing made from the metal of old guns. There is an inscription recording Prince Victor's death, and on the sides of the base of the cross are recorded the war services of the late Prince.

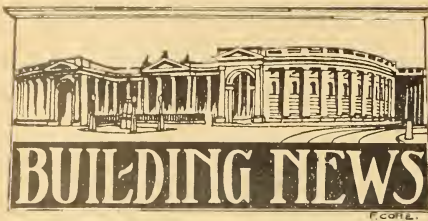
Since the Light Railways Act was passed in 1896 the Commissioners have dealt with 309 applications from all parts of the country. In the aggregate these schemes were designed to cover a distance of rather more than 3,000 miles, and were estimated to cost 20½ millions. Of the entire number 167 have received official sanction, 70 were rejected, and 41 withdrawn, while others have still to be dealt with. The projects approved embrace a distance of 1,360 miles, and will necessitate an expenditure for land and labour of about £8,824,000.

A special service was held at Killaloe Cathedral for the dedication of a peal of eight bells, erected by the church people of the diocese to the memory of the late Right Rev. William Bennett Chester, D.D., Bishop of Killaloe and Kilfenora from 1884 to 1893. It has been found necessary to make certain structural alterations and improvements in the tower, where there had been but one bell hitherto. This work has been carried out at a cost of £1,000. The new portion of the tower is in keeping with the style of the cathedral, a building of the twelfth century Gothic.

Pressure on our space has compelled us to defer our promised notice of that magnificent and unique record of Georgian Architecture in America and Great Britain, entitled, "Colonial Architecture," in order that we may devote adequate space to an appreciation of its merits. "Colonial Architecture" is published by "The American Architect and Building News" Company, New York, at six dollars per part, and we can only say at present that it is well worth the money.

A brilliant and thoughtful essay on the subject of the Decoration and Embellishment of Irish Churches was delivered by the Rev. Father O'Donovan at the recent meeting of the Maynooth College Union. For many a long year no such able and trenchant criticism of Art in Ireland has been made. Father O'Donovan has the courage of his convictions, for he spared neither priest nor layman, but, hitting out straight from the shoulder, administered many a telling blow. In a later issue we hope to publish the address in question.

The stone figure of St. Andrew that formerly occupied an honoured position in connection with the sacred edifice that bears his name in Suffolk-street, Dublin, has long lain hidden from public gaze at the back of the church. We are glad to see it brought once more into notice, and, although showing the signs of age and rough weather, the effigy of the good saint makes an interesting object in the churchyard surrounding the handsome building that replaced what was known as the "Round Church," destroyed by fire some forty years ago. St. Andrew's occupies a site of ancient historic importance. "The mount" that formerly stood here is mentioned in the old annals, and has many interests attached to it. St. Andrew's is one of the most admired of Mr. W. H. Lynn's beautiful churches.



Belfast.—NEW FISHERWICK PRESBYTERIAN CHURCH.—We understand that Mr. I. F. Ebner, London, supplied the pitch-pine wood block floors for both church and schools through his agent, Mr. Wm. J. Shaw, of 58 Corporation-street, Belfast. This was, by an oversight, omitted in report of opening services.

Blackrock (Co. Dublin).—BLACKROCK DISPENSARY.—Mr. J. J. O'Callaghan, C.E. (Dublin), wrote stating that in accordance with instructions he would prepare plans and specifications for a dispensary residence to cost £800.

Buttevant (Co. Cork).—To-morrow (Thursday) Mr. John Greene, Knockane, Ballylough, receives estimates for a new dwelling-house.

Clonakilty.—On the 28th June estimates were received by Miss Helena O'Brien, 16 Mill-street, Clonakilty, for building new business premises.

Clonmel.—The Joint Committee of the District Asylum have decided to build three new blocks. No Architect has as yet been appointed.

The Christian Brothers have decided to add a wing to contain Science Class-rooms, etc., to the High School. Mr. Walter G. Doolin, M.A., Dublin, is the Architect.

PROPOSED NEW TECHNICAL SCHOOLS.—It has been decided that the amount of the loan to be raised for building should be £1,200, the new central school to be in the vicinity of the Christian Brothers' School.

The Christian Brothers are about to build additions to the new High School recently completed. Mr. W. G. Doolin, M.A., is the architect.

Cork.—Messrs. Lunham Bros., Bacon Curers, Cork, have gone into new offices which have been built for them by Messrs. E. and P. O'Flynn, Contractors, from the designs of Messrs. Robert Walker & Son, Architects, Cork. The floors to the offices are of oak and pitch-pine parquetry, and were supplied and laid by Messrs. Turpins, Queen's-road, Bayswater, London. The iron doors to strong rooms were supplied by Messrs. Hobbs, Hart and Co., Cheapside, London, and the tower clock was supplied and fixed by Wm. Potts and Sons, Clock Manufacturers, Leeds.

On the 1st inst. Messrs. W. H. Hill and Sons, architects, Cork, received tenders for the erection of six houses near College Road, Cork.

Dublin.—CHRIST CHURCH, RATHGAR.—On the 23rd ult. Christ Church, Rathgar, which has been undergoing extensive improvements for some time past, was re-opened for public worship. The congregation attached to the church is a very large and representative one, and the seating accommodation available within the building had grown so limited that an enlargement became absolutely necessary. Accordingly a number of alterations were decided upon with a view to increasing the accommodation available for the congregation, and the scheme, which cost between £4,000 and £5,000, has been carried out in a most successful and satisfactory manner. The transepts have been doubled in size, and a chancel has been added for the accommodation of the choir and the organ. Nearly 200 extra seatings have been provided by the enlargement, and of this number all but twenty have already been allotted. The new organ, which was heard for the first time on that day, has been built by Messrs Dray and Davison, of London, at a cost of about £700. It is a magnificent instrument in every respect, and should prove a distinct advantage to the services in the church. The contractor for the structural alterations was Mr. Crighton, Rathgar, and the plans were prepared by Mr. William Mitchell, of Dublin. The heating is on the "Plenum" system, and is by Messrs. Musgrave and Co., Belfast.

South Dublin.—LABOURERS' DWELLINGS.—A letter was read from the Secretary of the Crumlin Branch of the United Irish League, enclosing copy of a resolution passed by that branch, urging on the Council the necessity for the erection of labourers' dwellings in the Crumlin district. It was decided that the matter of an improvement scheme under the Labourers' Acts be considered at next meeting.

SOUTH DUBLIN LABOURERS' COTTAGES.—It was decided to erect 26 additional labourers' cottages in Rathfarnham. This was recommended by a report of a sub-committee that investigated the matter. The Council adjourned.

Dundalk.—CHRISTIAN SCHOOLS.—On Monday week a largely attended meeting of some of the Catholic parishioners was held in the Vestry of St. Patrick's in response to the following circular:—"DEAR SIR,—It has been long felt that the unsanitary condition of the Christian Schools, known as the Old Chapel Schools, is dangerous and prejudicial to the health both of the teachers and the children frequenting them. His Eminence the Cardinal, on the occasion of his recent visit to Dundalk, inspected the Schools and decided that steps should be immediately taken to remodel and repair them. In furtherance of this object, a public meeting of the parishioners will be held in the Vestry of St. Patrick's, on Monday evening, 10th inst., at 8 o'clock, which meeting you are requested to attend.—Yours truly, B. DONNELLAN, Adm." Father Donnellan stated fully the object of the meeting. They were, many of them, aware that the old portion of the Christian Schools, formerly the Chapel Schools, built on the site of the old Chapel of Dundalk, were in a rather dilapidated condition and much in need of repair. After giving the matter full consideration his Eminence instructed him (Father Donnellan) to get the Schools examined by Mr. W. H. Byrne, the architect, and to have a report from him as to what amount of repairs the schools would want. Accordingly he had summoned the present meeting of the parishioners, who would have to find the money for this work, to lay the matter before them.

Kilkenny.—The R. C. church, begun some years ago from the designs of the late Mr. Wm. Hague, is, after being derelict for a long period, about to be completed under the supervision of Mr. W. H. Byrne, architect, Suffolk-street, Dublin.

Kilmacrenan (Londonderry).—On the 23rd June Mr. John M'Intyre, architect, Derry, received the tenders for Mr. Neil Coyle's new dwelling-house.

Larne.—Mr. Fletcher made a clear and interesting statement, explaining the aims and methods of the new Department over which Mr. Horace Plunkett so ably presides. They desire to enable every working man and woman in Ireland to improve his education—not a bookish education, but such a training as will enable them to earn a better livelihood by doing better work. To this end they propose to establish evening classes in various subjects, taking careful note of the needs of each place. In the town of Larne they may have a class for those who work during the day in the foundry or the shipyard, or as mechanics in any of their public works. They can learn more about machine construction than they knew before, and thus become more skilful workmen. Also a class for the study of steam, and one for building construction are proposed, for the benefit of our boys who want to become good engineers and carpenters, while some knowledge of mathematics, indispensable in all these trades, will be taught in another class.

FIRST PRESBYTERIAN CHURCH, ISLANDMAGEE.—The opening services commenced by the Moderator of the General Assembly were continued yesterday in the above church by the Rev. R. J. Lynd, D.D., Belfast. Notwithstanding the severity of the weather, there were large congregations. At the close of the morning service, Dr. Lynd congratulated the congregation on the completion of their beautiful and commodious church, which he said reflected the utmost credit on minister, people, and all concerned, and which surpassed all his anticipations when he had the pleasure of taking part in the ceremony connected with the laying of the foundation-stone.

Londonderry.—On the 1st inst. the Corporation received tenders for the erection of three isolation cottages at Foyle Hill, Derry. Mr. A. Fletcher had charge of the scheme,

To-morrow (Thursday) Mr. M. A. Robinson, architect, Richmond-street, Derry, will open tenders for alterations to the Lecture Hall, Derry.

New Ross.—The Local Government Board wrote asking to be furnished with certified copies of plans, specification and estimate of the kitchen and operating room. They also observed that as it was most probable that when these works were completed their total cost would be found to exceed the sum of £400. The consent in writing of the majority of the guardians should be obtained in the proposed expenditure. The matter was adjourned to next meeting.

Rathdown.—THE RATHDOWN UNION ROMAN CATHOLIC CHAPEL.—Mr. Kennedy said it was usual in the case of buildings like the Roman Catholic chapel and nuns' residence there should be a ceremony of laying the foundation-stone. He proposed that the chaplain, Rev. Canon Quinn, be asked to approach the Archbishop with a view to asking his Grace to lay the foundation stone for these buildings.

Youghal.—On the 9th inst. tenders will be received for alterations and additions to the Youghal Industrial School, Cork, for the accommodation of lunatics, the erection of chapel residence, lodge, mortuary and other works in connection therewith. Mr. Henry A. Cutler, city engineer, Municipal Buildings, Cork, is the architect.

The City Engineer of Cork will, on the 9th inst., receive tenders for alterations and additions to the Youghal Industrial School, Cork. The work includes accommodation for lunatics, lodge, mortuary and a new R.C. chapel.

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THE SOCIETY OF ARCHITECTS, LONDON.

VISIT TO OXFORD.

It is proposed to arrange for a Summer Excursion to Oxford, on Saturday, July 27th, 1901, when Mr. N. W. Harrison will meet the party and act as leader.

The date selected will give those desiring to do so an opportunity of spending a week-end at Oxford.

Members may introduce friends, and ladies are specially invited.

We recently paid a visit to the works of the Plate Glass and Silicate Marble Co., Ltd., Johnston's place, Dublin, and were very pleased to see a flourishing little industry in operation. Silvering, bevelling, grinding, and embossing are all done on the premises; hitherto all this work had to be sent to England to be bevelled or silvered. We had also an opportunity of seeing the workshops in which these processes are carried on, and were much gratified at the completeness of all the arrangements. As the firm do all their own cutting, grinding, and silvering, they are able to utilise all the waste from the cutting of the plate glass, which hitherto in Dublin had to be thrown away as useless, because such pieces could not be silvered or shaped over here. Of course getting such work done in Dublin effects a substantial saving in freight, &c. Another department is the Silicate marble work. This is a process of marbling on sheet or plate glass, and it has a very effective appearance, while it is as cheap as a plain tile, but, being glass, is thoroughly impervious to moisture. The operating room of the Commercial Cable Company, Waterville, about 140 feet by 60 feet in size, has recently been finished in "Silicate marble" under the direction of the architect, Mr. Fuller. It has also been used for the lavatories of the D.B.C. Restaurants, Dublin. The firm likewise make a speciality of stained glass and leaded lights, of which they have executed a great deal. Amongst the churches glazed are Castlebar and Dunaskeagh new R.C. Churches, and stained glass at the Molyneux Church, Bride-street, Dublin. The company do a good trade in plate and sheet glass, the large windows at Messrs. Todd, Burns, and Switzer's, having been supplied by them.

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The New Offices, Police Station, South Shields, are being warmed and ventilated by means of Shorland's Patent Manchester Grates and special inlet tubes, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.



Clonmel.—MORE EXTRAORDINARY PROCEEDINGS! THE SANITARY WORKS AT THE WORKHOUSE.—The Chairman referred to the discussion on the sanitary works at last meeting, and said he had asked Mr. Hackett, C.S., to attend, but he had written saying he could not do so. A committee had been appointed at last meeting apparently to revise the work of the previous committee, a proceeding which he disapproved of altogether. The original committee had explained in detail what they wished to have done, and as the Board had approved of their action he failed to see the necessity for the second committee. Mr. Guiry—It was merely appointed to confer at a moment's notice with Mr. Hackett about the details, according as he prepared his plans. The Chairman objected to one committee revising the action of another (hear, hear), and said if this kind of thing went on he would refuse to be a member of a committee, and make room for someone else taking the chair (hear, hear). Mr. Guiry did not think there was any idea to slight or over-ride the old committee. A few local gentlemen were simply named to confer with Mr. Hackett about details. Mr. Nugent—It looked very strange to be revisiting the old committee. The Chairman was sure no slight was meant, but it was irregular. Mr. Hackett said his plans "hold the field." The Board could proceed on any plans they liked. Mr. Kennedy—We don't know whether we will go on with the new plans or not. Chairman—No plans hold the field, but Mr. Hackett is entitled to his fees on all his plans. The Chairman said they had given implicit instructions to Mr. Hackett as to what was required. The Clerk remarked that Mr. Hackett had the plans pencilled out according to the committee's report, as he had seen them. Chairman—We must ask him to submit them. Mr. Minton—I think Mr. Hackett meant that his plans were approved by the Local Government Board, and there were no other official plans in existence when he spoke about his plans holding the field. Mr. Nugent—That does not mean we would carry them out. Mr. Minton—No, but that his first plans would be superseded by the new ones. Chairman—I only objected to the appointment of the second committee to override the other. Mr. Minton—That was not meant at all. I don't think the members of the second committee were very anxious to act. Mr. Grubb—And so did I. The matter dropped.

Slievardagh (Clonmel).—APPALLING INSANITATION.—A CLOSET IN A CREAMERY.—The Inspector of Factories reported that a closet with open seat had been erected in a room in Ballingary Creamery where the cream was cooled—a most undesirable state of things, which should be immediately remedied. Dr. Fitzgerald, in his report on the matter, said the closet had never been used. The closet should be removed and erected some distance from the creamery. It was ordered to notice the Creamery Company in the matter. With reference to the condition of Mullinahone creameries, Dr. Moloney reported that the manager of Mrs. Cahill's creamery had promised that the necessary repairs would be attended to at once.

Sligo.—Although the quantity of water available from the present works for the town of Sligo is ample, for various reasons it has not in latter years been quite satisfactory, and the Corporation consulted Mr. J. H. H. Swiney, M. Inst. C.E., of Belfast, as to what course to pursue to remove the causes of complaint, and improve the services generally. Mr. Swiney's report was received and considered at two recent committee meetings, but although his recommendations were approved of, we understand the Corporation has deferred acting upon them until their finances are in a more flourishing condition.

Tralee.—For some years past, in dry summers, the water supply of Tralee has been running short, partly owing to want of sufficient storage, and for the purpose of augmenting this a new reservoir was suggested. Before undertaking the work, the Urban Council called in Mr. J. H. H. Swiney, M. Inst. C.E. of Belfast, to advise them as to the best course of procedure. The supply at present is taken from a catchment of nearly 1,400 acres of a very absorbent nature, with some fine springs upon it; but the town has practically to depend on the natural flow of the stream, in the lower course of which, it is supposed, much of the water disappeared. It was proposed by the Council's engineer, Mr. Hickson, to tap the stream higher up by an intercepting well, and build a small reservoir adjoining. There being very little data available to enable an engineer to estimate the probable discharge of the stream, the conditions of which differ somewhat from that of other districts, Mr. Swiney, among other things, advised, before constructing the reservoir, that the weir be erected with a gauge, and the dry weather flow regularly measured, when, if they found their suspicions of the disappearance of the water in the lower reaches confirmed, they might, by leading the water direct from the weir to the present clear water tanks, dispense with the new reservoir altogether, or, in any event, supply their engineer with sufficient data to enable him to estimate accurately the amount of extra storage required. At their meeting of June 3rd this recommendation of Mr. Swiney was considered and adopted, and their engineer instructed to proceed with the construction of the weir at once.

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ST. PATRICK'S CATHEDRAL.

REMARKABLE ARCHEOLOGICAL DISCOVERIES.

Sir Thomas Drew, President of the Royal Hibernian Academy, has sent the following letter to the Dean of St. Patrick's:—

St. Patrick's Cathedral,
June 24th, 1901

DEAR MR. DEAN,—In your absence I have the pleasure to report to you perhaps the most interesting of the successive archaeological discoveries which seem to have followed each other at St. Patrick's during your time, and in my connection with it in twelve years—viz., the finding of the undoubted site, and record of the Ancient Well of St. Patrick, from which this most ancient Church's foundation had its origin. It occurred on the 18th of June, and by the vigilance of Mr. Spencer Harty, the City Surveyor.

It is, of course, matter of general knowledge that the present Cathedral of St. Patrick is a great Anglo-Norman Church, which, in the thirteenth century, superseded and occupied the site of a still more ancient Church of Irish foundation—of St. Patrick in Insula. This more ancient Church owed its origin in the low-lying valley of the Coombe to the existence of the venerated Well of St. Patrick, at which the great Missionary Saint was reputed to have baptized converts. In centuries succeeding the 13th, native Irish and pilgrims from distant lands are recorded to have not ceased to visit and venerate the Well; but under the rule of the Anglo-Norman ecclesiastics, who do not appear to have held enthusiastically in honour a mere Irish saint, the Well seems to have fallen into neglect, and, finally, to have disappeared since the end of the 16th century.

It is a strange incident of survival of history that passing and quite disconnected records by three or four writers in different ages should have happened to present themselves to me about the same time some years ago, and to supplement each other so remarkably as to point out the exact situation of the lost Well.

First came Archbishop Ussher, who seems to have been among the last to see the Well itself about 1590. He said:—"In the enclosure of the Church of St. Patrick, not far from the Tower, we have seen that Fount of St. Patrick at which Dublin neophytes were baptized, lately, enclosed among houses and choked up."

A previous writer, Andowe, in 1509, described the Well as "near the house of the Prebendary of Howth."

Dr. John Lyon, the famous antiquary, Treasurer of St. Patrick's, and compiler of the *Novum Registrum* of Christ Church in the 18th century, who lived his long life a resident of his own proper manse in the precincts of St. Patrick's Cathedral, quotes from an ancient record that the Well was "in the outer court of the Archdeacon of Glendaloch's Cloister."

Latest of all, Malton, the illustrator of Dublin Architecture in 1795, described with his published view of the West Front of St. Patrick's, how the site of the Well "was under the hall of the house seen beyond the ruin" in his view.

You will remember the recovery about eleven years ago of Ancient Survey Maps of the properties of the Cathedral within its Liberty of St. Patrick's, made by Kendrick about 1750, which are now in Marsh's Library, and from which, with the aid of Rocque's Map, 1754, and the Ordnance Survey, and other authentic data, I was enabled to draw a definite map of all the ancient surroundings and holdings of the Cathedral of which ancient lines then remained, and which are now eliminated. These maps defined specifically the house indicated by Malton and Archbishop Ussher, a leasehold of a family named Rotton previous to 1750. With such a concurrence of record before me, it was no difficulty to mark by a cross on my map the near spot in the roadway of Patrick-street, and under the pavement, where any survival of the Well might be looked for.

The occasion has arisen in the progress of the great drainage works by the Corporation of Dublin. Mr. Spencer Harty, the City Surveyor, who has always an intelligent interest in the historic landmarks of old Dublin, has not failed to keep an eye on the prophetic cross on St. Patrick's map, and personally superintended the excavations at the indicated spot. He soon found the ancient causeway of Patrick-street lower by six feet than the present one, within a few feet of the spot instinctively indicated. The record of the Well was at once verified by the finding of a very ancient cross, or, rather, two crosses, inscribed in high relief on a great granite stone. The Well itself had disappeared. Mr. Harty, with me, attributes this to a diversion of the Poddle by an arched culvert which directed the water-power along the west front of the Cathedral, turned a corn-mill built against the west front of the Cathedral itself, and gave its name to the "Cross Poddle," and went on to grind at other mills. This diversion, and its great stone culvert, was probably made in the time of Charles II., and eliminated the Well itself. It could be no mere coincidence that this remarkable stone found by Mr. Harty built into the north wall of the Poddle culvert was on the exact spot where St. Patrick's Well was looked for. It has seen the light once more on June 18th, 1901, after centuries of oblivion.

The stone has been removed to the Cathedral in your absence, as the popular interest about it required its safe-keeping until your direction about it can be had. It affords a most interesting example for the antiquarian of that most archaic type of Celtic cross enclosed in the mystic circle, with a faint development of those cryptic rays, the tradition of which is a puzzle for speculative archaeologists. It is in such high and clear relief, despite the very ancient surface texture of the granite stone, that it suggests that this was a stone which had seen little weather exposure, and had been protected under some roof or canopy. I, who am familiar with all the stones found about the Cathedral, have no doubt whatever that this new find must be grouped with other granite stones and inscribed crosses now to be identified as relics of the far-off Celtic St. Patrick's. So archaic an impression does it give that it might not be unreasonable to assign it conjecturally to any time in the 6th century. It very certainly must date back to a very long time before the transfer of Celtic St. Patrick's to the Anglo-Norman Archbishop Comyn in 1190.

It is possible that there will be a feeling aroused that this recovered record of the very birth of Dublin city and the church, now identified as one with a tradition of 1,300 years of pious veneration, should not be disregarded, and that some memorial should mark the very site of the Well of St. Patrick.—I am, dear Mr. Dean, yours faithfully,

THOMAS DREW,

The Very Rev. Dean Jellett.

Cath. Architect.

A NEW PATTERN OF MORTISING AND BORING MACHINE.

A LABOUR-SAVING APPARATUS.

All builders and joinery firms with an eye to progress see the desirability of keeping themselves well posted in regard to the latest improvements in labour-saving machinery. One of the most important of joinery operations is, naturally, morticing. The well-known firm of J. Sagar and Co., Saw-mill Engineers, Canal Works, Halifax, England, makes a speciality of this class of machinery; one of their most recent patterns is the mortising and boring machine which we illustrate. It is intended for the general run of morticing in joinery, sash and door work, etc. It is easy of operation,

be easily set in the exact position required under the mortice chisel. The boring spindle and morticing spindle are set in the same line, and the table is arranged to travel longitudinally by rack and pinion wheel, so that (and this is of great importance) the piece can be placed almost instantly under either boring bit or mortice chisel, *in the exact position required.* The table has a vertical adjustment by screw to suit the work in hand, and it is then raised by a foot lever to the mortice chisel, so that the latter enters the wood gradually, and with no inconvenient jar to the operator's leg.

If desired, the boring apparatus may be worked from a separate shaft. The machine takes 11 inches deep by 4½ inches thick.

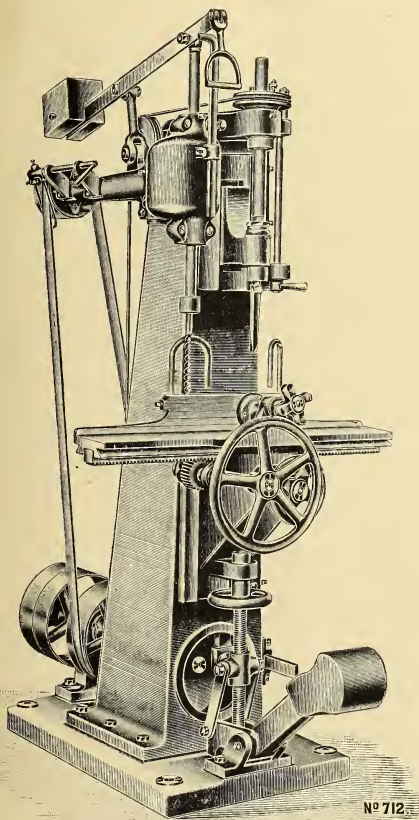
An article on some features of "Old Dublin" now appears in the double Saturday number of the *Evening Mail*, by Mr. MacArthur, each week.

The head office of the Irish Portland Cement Co. is now situated at 43 Dame-street, Dublin, where all communications should in future be addressed.

Rules for Sizes of Windows.—The following rules are given by different authorities: Area of window surface = $\sqrt{\text{cubic contents of room}}$ (Robert Morris) breadth of window = $\frac{1}{2}$ (breadth \times height) of room, height of window two to two and a half times breadth (Sir W. Chambers); 1 ft. super. of window space to every 100 cub. ft. or 125 cub. ft. contents of room in dwelling-houses, 1 ft. super. to 50 cub. ft. or 55 cub. ft. in hospitals (Sir Douglas Galton); 1 ft. super. of light to every 100 cub. ft. contents of room (Joseph Gwilt); width of window equals side of square whose diagonal is the height (J. S. Adams). The window sill should be 18 in. to 36 in. above the floor, but the average should be 39 in.; the head of the window should be as high as possible.

The Liverpool Cathedral Question.—An article in the *Liverpool Courier* on this subject last week, in favour of the St. James's Mount site for the Liverpool Cathedral, is headed by a plan of the site, showing the ground plan of Mr. Emerson's design as placed on the site. This plan is at once the strongest possible condemnation of the site on architectural grounds. It shows the cathedral with its side facing downhill towards the principal street adjoining, and its east and west ends facing nothing whatever. A cathedral facing downhill eastward or westward may have a fine effect; one facing downhill sideways has the worst possible effect. No one with a feeling for architectural position and alignment of a large building could ever have recommended such a situation. On architectural grounds, at all events, it will be a complete mistake. —*Builder.*

Many Plans have been proposed in order to prevent wood becoming worm-eaten and attacked by dry-rot. The ordinary method of preserving wood, which is to be worked by the carpenter or cabinet-maker, is kiln-drying, which consists of exposing to a rather high temperature; the water being eliminated and the albuminous and gummy constituents hardened. Wood is also treated by various chemical processes, all of which have for their object the filling up of the pores of the wood with some preservative material, Kyan using corrosive sublimate; Payn, chloride of calcium, succeeded by forcing in a solution of sulphate of iron, by which an insoluble sulphate of lime is formed in the body of the wood. Sir W. Burthett's process is to impregnate the timber with a solution of chloride of zinc, and in Mr. J. Bethell's process the wood is thoroughly impregnated with oil of tar containing cresote, and a crude solution of acetate of lead. This is done by first obtaining a vacuum, and then forcing the liquid into the pores of the wood under pressure. All the above processes, not only preserve the wood from dry-rot, but from the influence of the weather and the attack of worms.



№ 712

MORTISING AND BORING MACHINE.

capable of running at a very high rate of speed, and will get through a lot of work in little time. The crank shaft runs in bearings attached to the base of the machine, and the boring apparatus is driven from the same shaft, so that the machine is entirely "self-contained." The chisel spindle has automatic reversing motion. The mortice chisels supplied with the machine are "self-coring"—i.e., they are of a construction which brings out the cores as they are cut.

THE METHOD OF OPERATION IS AS FOLLOWS:—

The article to be morticed is fastened to the table by a clamp. This table has a screw adjustment, so that the piece can

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NOTICE.

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No. 996

Rights as to Sewage.

The number of the *Journal of the Royal Institute of British Architects* for 8th June contains a very interesting paper, entitled, "Rights as to Sewage." It was read by Mr. Algernon Barker, Barrister-at-Law, before the Northern Architectural Association at Newcastle.

Having of late written a good deal on this subject, we were anxious to learn Mr. Barker's views, and have derived much useful information from a perusal of his essay.

Mr. Barker deals *seriatim* with the various aspects of the Public Health Act and the Common Law, so far as pertains to the rights and responsibilities of sanitary authorities, owners, and occupiers. In the main, the paper is a useful contribution to the literature of the subject, and, though elementary, is practical. But in one or two points Mr. Barker is over-dogmatic, and in one instance at least—and an important one, too—is inaccurate. At the very start of his essay he begins by defining sewage, and defines it as "foul water, in accordance with 'Ogilvie's Imperial Dictionary.'" Now, with all respect to that excellent work—which we hold in high esteem—it is not the law of the land, and it is useless to quote it as an authority, especially in instances where the statute law provides an express definition such as exists in the law of "drain" and "sewer," or where we find questions dealt with in what the lawyers call "raised judicature"—for Lord Davey, in a judgment in the Court of Appeal, stated that a sewer may be used for the conveyance of rain water only, and yet be a "sewer"—i.e., to define a conduit as drain or sewer, regard need not be had to the nature of its liquid contents.

Mr. Barker, however, gives us a lot of information, much of which will probably be new to many of his readers, though we have dealt with this subject before Mr. Barker's paper was published. Amongst other matters he gives a very lucid explanation of the difference between a sewer and a drain. He says—"First you ask whether your conduits are 'drains' in a statutory sense. The tests to apply are—Whence does the sewage come? Whether does it go?" This sums up the whole question in a nutshell. These two questions answered, it is easy to give a correct answer. Though Mr. Barker confounds the issue by saying "we are dealing with drains for *sewage*," whereas the question of whether the conduits contain what he calls "sewage"—i.e., foul water—has nothing whatever to do with determining their proper character. Though he sums up the matter very neatly when he says, "If BD is a drain you will have to go hat in hand to the local authority and listen to their orders if you would connect it with their sewer EF. But if BD is kind enough to be a sewer, then you have already con-

nected AB and CB with a 'sewer,' and if the local authority refuse to connect the two sewers, then it is not a question of 'hat in hand,' but a sheet of foolscap for a petition to the L.G.B." The various other questions which require consideration in dealing with the subject of the law of sewerage are very fully dealt with, but exigencies of space forbid our dealing with them at present.

Back Lands!

Mr. Peter Fyfe, the Chief Sanitary Inspector of Glasgow, has written a pamphlet entitled:—"Back Lands and their Inhabitants," the particular back lands dealt with therein being the slums of Glasgow. The pamphlet embodies an address delivered before the Association of House Factors and Property Agents in Glasgow—a society apparently doing a very useful work in that city—a work which might well be copied in Dublin, where there is ample demand for such an association, which would, while carefully guarding the financial interests of the owners of house property, establish a satisfactory basis for co-operative work in repairs and maintenance, would enable the members to have happier relations with the sanitary authority, and last, but not least, incidentally inculcate a higher sense of responsibility for the public health on the part of its members.

Mr. Fyfe, in his address, endeavoured to prepare the minds of his hearers for the coming and inevitable condemnation of much of their property, and sought to combat the natural instinct of preservation of vested rights. This was the first obstacle to his ideal, the second being that it was said a certain class of the inhabitants could not be equally well served by dwellings in "front lands," while the third objection is the old one which is ever with us in Dublin—namely, that when the existing homes are demolished the people have nowhere to go to.

For the enlightenment of our readers we should explain that the expression "back-lands" is a legacy left to Glasgow by the late Chief Medical Officer of Health, Dr. J. B. Russell, who, before having indicated that the future improvement of the city lay in the removal of many "back-lands," which, as Mr. Fyfe says, "in this twentieth century still remain to darken and curse our civic life." These melancholy expressions tend to show us that the great City of Glasgow, with the greatest, soundest, and most progressive municipality in the whole world, has still many plague spots.

Mr. Fyfe's essay describes the structural and sanitary conditions of the dwellings of the poor in Glasgow, and he apparently considers the close building, together with the resultant lack of direct sunlight and insufficient air as one of the most serious defects of the existing state of things. He gives a large number of illustrations and diagrams to bear out this contention, and of these we may say in passing that we could very easily beat them for squalor in Dublin—the worst one of all, Mr. Fyfe declares, to have about the highest death-rate in Glasgow, some thirty-one per thousand—a figure more closely approximating to our occasional Dublin death-rate than is pleasant to think of. To us Dubliners, the most notable thing about the essay is the truly admirably system of inspection which it evidences. Would that we had such a system in Dublin.

The frontispiece of Mr. Fyfe's little brochure is a photograph of a typical Glasgow back-land, with a large group of slum children who, despite their dark surrounding, look, it must be admitted, hardly little wretches enough, and this we believe is the experience of medical men who know Glasgow. A sad contrast to our sickly and underfed little ones in the slums of Dublin.

Dublin Electric Lighting Scheme.

A pamphlet has lately been printed containing a selection of the able and trenchant criticisms of "C.E.," being the letters published in the *Daily Express*, *Daily Independent* and *Nation*, and *Irish Times* from August to December, 1900. They form together very instructive reading for the citizens of Dublin.

The Great Work of Mr. Horace Plunkett's Department

Pressure on our space has prevented us from sooner noting the receipt of the *Journal of the Department of Agriculture and Technical Education* (First Year), and dated May, 1901. The

aims and objects of this Department are so practical, so well conceived, and up to the present carried out in so broad-minded and liberal a spirit as to commend them to all patriotic Irishmen without respect to creed or class. The particular bent of our journal debars us from dealing with those details of what may be broadly termed agrarian interests—such as horse and cattle breeding, tobacco culture, agriculture pure and simple, and so forth—further than to offer our meed of praise for so truly admirable an effort to help forward those important interests—doubly important in a country which is like Ireland, chiefly dependent on the products of the soil for its national existence.

Of the Technical Education schemes initiated or helped on by the Department it is too early to speak with any great certainty as to ultimate results. But the system inaugurated is free from red tape, is now blessed with such auspices that there is every augury of happy and lasting results for Ireland contained in it. For a first year's report the record of solid work done is truly marvellous. Amongst other matters, the report treats of projected courses in Manual Instruction, of which some very practical remarks are made. The importance of drawing as an aid to technical and industrial progress is insisted upon—an item of knowledge hitherto greatly neglected, for it is often lamentable to see many an Irish industry or craftsman's workshop crippled by reason of the incapacity of either master or men to express thoughts and ideas graphically.

The Department has also inaugurated a series of Technical Instruction tours, deputations from various districts visiting the best centres of technical instruction in England and Scotland; while the scheme of subsidised lecturers who lecture on technical subjects throughout the country, has, to a great extent, roused the country to a sense of the importance of technical education. The great danger to the usefulness of this Department which we see looming ahead is the ever-present possibility that the Department of Agriculture and Technical Education may deteriorate into a mere "Government department," such as the National Education Board, the Board of Works, or, in fact, the vast majority of Government departments, from the War Office downwards, "hidebound" in red tape and cursed by incompetence, neglect, or wanton indifference to the interests committed to it. That such a fate may be far from the Department having control of the destinies of technical education in Ireland is, we feel certain, the earnest hope of every one of our readers.

"Magistrates' Orders."

It may be of interest to our readers to know the procedure by which "Magistrates' Orders" in sanitary cases are made out in the Dublin Police Courts. Well, the case is fought out to the bitter end, and the magistrate makes known his decision. The defendant, perchance, has succeeded in defeating some arbitrary and illegal demand upon the part of the authorities, but has had to submit to a modified demand being enforced. To his astonishment he finds, when the order comes to be served, that the very points he has been fighting against are included in it. The explanation is simple, if startling. One would naturally suppose the "orders" would be drafted by some officer of the Court; but what is the fact? The practice in the Dublin Police Court is for the plaintiffs themselves to make out the order—apparently in what terms they please—and the worried magistrate, glad to be rid of them and their case, placidly signs!

The Arts and Crafts Society of Ireland.

The Arts and Crafts Society has lately published its journal for 1901, and a perusal of its contents must fill with gratification every individual interested in the progress of arts and crafts in Ireland. The most interesting portion of the journal is that devoted to a report on the last Exhibition held by the Society. The exhibition, inaugurated with the most admirable motives, has, no doubt, been productive of much good, not the least important item of which is the opportunity which it gave of learning our shortcomings as regards the production of useful and artistic work. Very wisely, on the suggestion of Lord Mayo, to whom arts and crafts in Ireland owe so much, the Society decided to have the report on the Exhibition drawn up by an independent expert, an Englishman, Mr. Harold Rathborn, whose unbiassed judgment is therein frankly laid before the

public without any editing whatsoever. Mr. Rathborn having received a very varied artistic training, and being quite evidently possessed of considerable experience, was particularly well qualified to undertake such a duty.

Briefly put, the report is, on the whole, most encouraging. Mr. Rathborn was at once struck with the importance of the display. After enumerating the various sections which he inspected he goes on to deal with them in detail. Of the ironwork he has little good to say—the workmanship is substantial, but the designs hard and mechanical, and lacking the smallest element of artistic feeling, and "sadly needs developing." In regard to stained glass only one exhibit, that of Messrs. Ward, of Belfast, appealed to him. The rest lacks the essentials of good stained glass. We may here remark that Mr. Rathborn is probably unaware that the prevalent taste in Ireland is for a tawdry and vulgar type of work, the execrable Munich School having vitiated the taste of clergy and laity alike—hence the supply is made to suit the demand.

CARPETS.—For the Donegal carpets Mr. Rathborn has nothing but the highest praise; excellent in colour, design, and texture. It would seem to us that here is an excellent opening for a new industry in Ireland. The Donegal manufacture is rather too expensive for the public in general. Why should not a carpet, comparatively inexpensive, but good and simple in colour and design, be made in Ireland?

FURNITURE.—For the furniture, too, the report has high praise. The more modern type of furniture in the "Arty Crafty" taste—to use a vulgar expression—appears to have been on the whole very good and promising in character. The worst of it is, that most of it is not so much the work of *bonafide* workshops as of amateurs or industrial classes. However, that will be altered in time. Meanwhile the classes are doing excellent work, and affording much needed employment in many rural communities. The Dublin "antique" furniture deservedly gets a hearty word of praise.

WALL PAPERS.—The only exhibits were *designs* from the Schools of Art of Belfast and Cork, all very fair, one being described as "quite delightful."

WOOD CARVING.—These exhibits also seem to be chiefly the work of lady amateurs and classes in country districts. Be that as it may, Mr. Rathborn, while honestly critical, and not sparing in correction, deemed the exhibits most interesting. We have seen some of this work, and it is so good that it seems a pity that so excellent a work could not be developed to a greater extent.

HAMMERED BRASS AND SILVER WORK.—Mr. Rathborn's judgment may be summed up as on the whole good, but lacking in crispness; smug and ultra-respectable—far behind the best of the English work. Yet, for all that, it seems to us encouraging.

SILVER.—Shockingly behind-hand. "Altogether trudy and common-place." Mr. Rathborn regrets the jewellers and silversmiths won't return to the *true art* of the silversmith, or *beating up* silver. "Ireland is half a century behind England in this branch of the Arts and Crafts movement."

POTTERY.—The Belleek pottery—"EXQUISITE."—Would like to see a few more important examples.

THE LACE WORK AND TEXTILES generally are highly approved of and commended.

PAINTED TAPESTRY.—"POOR."

LETTER BOXES.—"Quite an industry in itself; might be much developed for the English market."

TOOLED LEATHER.—"Excellent examples; should be more encouraged."

The report aptly and happily winds up with these hopeful and encouraging words—"Is there not every reason for the Irish people to persist bravely and courageously in the new industrial paths opened to them by patriotic leaders, and to regain their triumph of former ages through the further development of those most useful faculties of system, steadfastness, and good will?"

WORKMEN'S COMPENSATION ACT.

The House of Lords has reversed another case under the Workmen's Compensation Act, in favour of a workman. A labourer was killed while passing on a plank from the ship on which he was employed, to land. The ship was in dry dock for repairs. The courts below held that the Act

did not apply to ships, and the widow of the deceased could not recover damages. The House of Lords, however, have unanimously reversed the finding. The dock in which the ship was put for repairs was held to be a factory in the meaning of the Act. The fact that the accident took place in connection with the ship made no difference. Because the Act did not apply to seamen, it did not follow that all workmen engaged in vessels in docks in whatever capacity were to be deprived of the benefit of the Act because the ships when at sea were excluded.

OUR ILLUSTRATIONS.

ROYAL VICTORIA EYE AND EAR HOSPITAL

The Site.

The Council have been fortunate in obtaining an admirable site of about two acres, with a considerable frontage, on the Adelaide-road, and also on Hatch-lane, and it is intended so to dispose of the new buildings on the site as, not only to give a southern aspect to the majority of the patients' rooms, but also to provide extensive grounds for the benefit of the patients, a matter of considerable importance in this class of hospital. Sun shelters will be erected in the grounds for the use of the patients.

The Building Generally.

The new buildings will consist of a main hospital, to accommodate 120 patients and the necessary and efficient staff, and extensive out-patients' department, the main frontage of which will be in Hatch-lane, by which the out-patients will reach the hospital. In addition to these there will be the necessary out-buildings, such as mortuary and post-mortem rooms, boiler house, power house, engineer's shop, coal stores, etc.

The Main Hospital.

The main hospital will consist of a building four storeys in height, including a basement. It has been designed in the Georgian period of architecture, with red brick facings and Portland stone and cast-concrete dressings, and Mansard roofs covered with green slates. The plan is a symmetrical one, having the official and operating block in the centre, connected by the main corridors to the pavilions, beyond which again are the sanitary annexes. The entire basement will be utilised. A steam laundry will be fitted up beneath the western pavilion. The connecting wings will be occupied by store-rooms of every description, nurses' dining-room, and porters' rooms. Beneath the east wing will be the coal stores, stores for patients' clothes, bath-room for newly-admitted cases, etc.

Kitchen &c.

The extensive kitchen department will be situated at the back of the central official block, and will be fitted with the most modern labour-saving appliances. The levels of the ground will be so arranged that the basement will be slightly above the ground level at the rear, while it will be about five feet below the ground level in front. The ground floor will be some seven feet over the ground, and at the principal entrance will be approached through a *porte cochere*. On the right and left of the vestibule a porter's room and a waiting lobby have been arranged, and from the vestibule a broad flight of stairs leads to the main hall, which is two storeys in height. From this hall a double flight of stairs leads to the first floor. The general arrangement of the ground floor is as follows:—

Ministration.—The Wards.

To the left of the main hall a corridor will extend to the pavilions. Off this corridor open registrar's office, resident medical officers' rooms, patients' rooms of two and four beds respectively, and ward kitchen. Each pavilion is designed as a ward unit, and is practically self-contained. It will consist of two wards, 35 ft. by 22 ft., containing 10 beds each, separated by a staircase and provided with a ward kitchen, a sisters' room, linen room, and a sanitary annex, containing lavatories, bath-rooms, w.c.'s, and ward maids' closet. These annexes open off the end of the staircase, and are shut off from it by a lobby with cross ventilation. This wing is for male patients. The east wing is similarly

arranged for female patients, a large board room and matron's apartments taking the place of registrar's office and resident medical officer's rooms. At the rear of the main hall will be situated the combined day and dining rooms for the patients. These rooms are divided by an ingenious arrangement of shutters, so that the two rooms may be thrown into one for entertainments or public meetings. Adjoining these day rooms are large service rooms fitted with food lifts from the kitchen department beneath, and also a dressing room, in which the patients' eyes will be dressed each morning. The general arrangement on the first floor will be similar to that on the ground floor, except that the wards for operated cases will be arranged in the central block over the board-room and registrar's office, etc.

Operating Theatre.

The operating block will be very complete. It will consist of two operating rooms, large sterilising room, anaesthetic and recovery room, ophthalmoscope room, laboratory, linen room, etc.

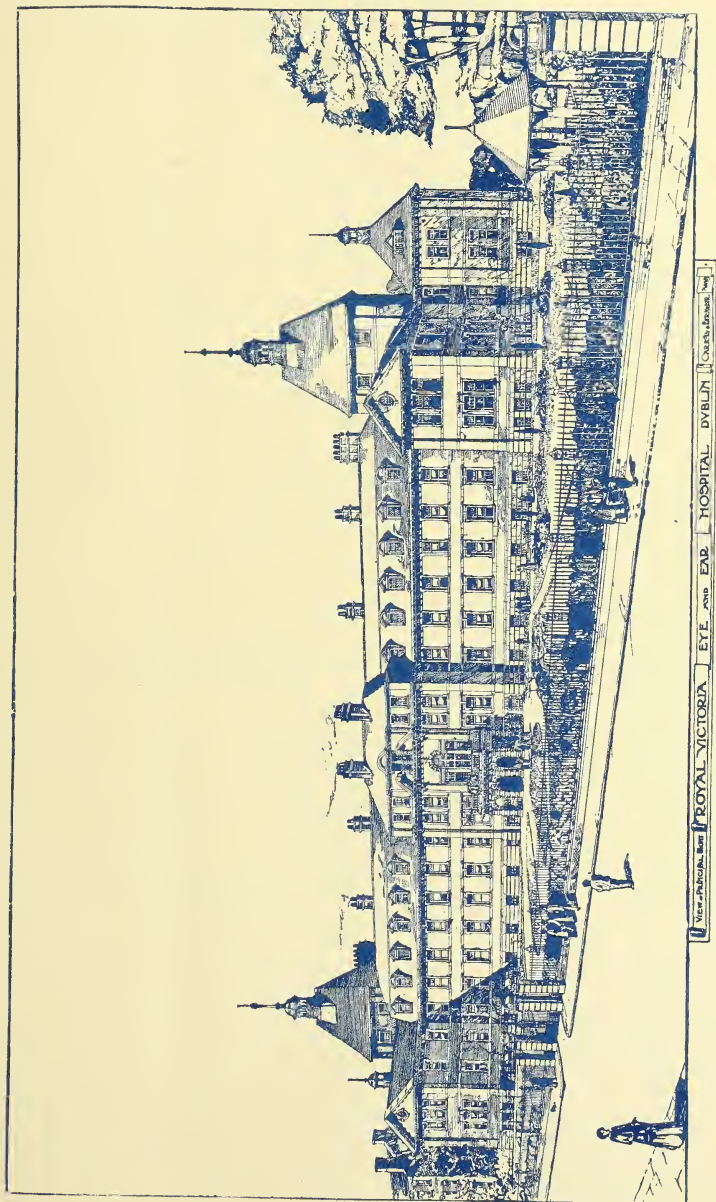
The second floor of the building will be occupied by nurses' sitting rooms and bedrooms; also the servants' bedrooms, box rooms, etc. The majority of the nurses will be accommodated in single rooms. A hydraulic lift for patients and coals will be provided from the basement to the top-most story of the building.

Out-Patients' Department.

The out-patients' department, as we have already stated, is approached from Hatch-lane. In the entrance hall is situated the clerk's office, where patients' records will be kept, and where new patients will be registered. On either side of the hall are arranged the spectacle room and pharmacy, and from the hall two glass doors (for male and female patients respectively) will lead into the waiting hall, where both old and new patients will be divided into groups corresponding to the surgeons' on duty for the day. Suitable sanitary conveniences are provided for the patients in connection with this hall. Two large consulting rooms will open from the hall, divided by an ophthalmoscope room of considerable size, which will be common to both consulting rooms. The stall divisions in this room will be of enamelled slate, kept well above the floor, so as to avoid interstices for dirt. The ophthalmoscope fittings will be of the most improved type for electric light. The refraction room, which is large and lofty, is directly accessible both from the consulting and also the ophthalmoscope rooms. It is lighted entirely from the roof. Opening off this room are two smaller rooms for minor operations; also three additional rooms for X-ray and other apparatus connected with the examination and special treatment of diseases of the eye. From the refraction room a short corridor communicates with the surgeons' library, lavatory, and cloak-room, and entrance. There are also two separate exits for the patients from this room. The ear department will be in duplicate like that for the eye, and will be situated, with the throat department, on the upper floor of the out-patients' department, approached by staircases from the entrance hall. The waiting rooms will open directly off the staircases, and the consulting rooms will adjoin. A separate staircase will be arranged for the surgeons to these consulting rooms from the large waiting hall.

Heating and Ventilation.


The warming and ventilation of the out-patients' department will be treated entirely separately from the main hospital. The system to be adopted will be what is known as the "Plenum" principle. Fresh air, forced in by a large fan, worked by an electric motor, and passed through an air filter provided with a water spray, will be conveyed by air ducts to the various rooms. This air will be warmed in the winter to any required temperature, by passing through a "Calorifer." The vitiated air will be extracted by a separate series of air trunks, communicating with the ventilating fledches on the roofs of the buildings. In the main hospital the system of warming will be that of radiators heated by steam below atmospheric pressure on the vacuum principle. The fresh air will be introduced by tobin tubes and ventilating sashes, and the vitiated air extracted through air shafts by electric fans, placed in the main ventilating fledches over the staircase towers.



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Construction.

The new buildings throughout will be of fireproof construction, breeze concrete being used very largely in the floors and internal walls. All floors and staircases will be laid on expanded metal lathing. The floors of corridors and the out-patients' department and sanitary annexes will be finished with red tiling, those of the operating block with terrazzo, and the entrance hall with black and white marble slabs. The ward floors will be laid with polished teak flooring, secured by secret nailing direct into the breeze concrete; the walls, generally, with Keene's cement. The rooms in the operating block will have a dado of white marble about six feet in height. The angles of all walls, ceilings, and floors will be rounded, so that they can be readily cleaned.

Our Illustration.

The drawing from which our illustration is taken was exhibited in the recent exhibition of the Royal Hibernian Academy, and the architects are Messrs. Rawson Carroll and Batchelor, F.R.I.B.A., 83 Merrion Square, Dublin.

The general contractors are Messrs. J. and P. Good., Ltd.

OBITUARY.**DEATH OF MR. P. SHERIDAN, BUILDER.**

We regret to announce the death of Mr. Patrick Sheridan, builder, which took place at his residence, Sutton, near Dublin, on 26th June.

He started business on his own account a good many years ago at Birr, when he took up and completed an unfinished Government contract, which another builder had started but was unable to see through. From that time his career was one of unbroken success, and his operations varied and extensive. Mr. Sheridan was particularly identified with the new barracks at the Curragh, where he came thirteen years ago, and has been fully occupied since, some of his contracts amounting to nearly £40,000. He has also been the War Department triennial contractor at the same place for a long period, and in this capacity has executed all the minor services and incidental items. In addition to this he was engaged on large jobs for the Board of Works, and private buildings as well.

Ever straightforward and obliging, Mr. Sheridan was well liked by the Government officials with whom he was brought into contact, and there was none of that friction which frequently occurs between public bodies and the outside firms they employ. Indeed, he was a man who won the regard of everybody who knew him. The funeral took place on Saturday, 29th June, and was largely attended, the burial place being at Birr. His two sons will continue the business, no doubt even more successfully for their respected father.

The Celebrated Delphian Temple of Apollo was designed by Trophonites. The oracles were delivered by a priestess, who sat upon a tripod placed over the mouth of a cavern, and who, having inhaled the vapour, pronounced some prophecy, or gave in verse or prose some answer to those who consulted the oracle. The great reputation of the Delphian oracle of Apollo made it the richest shrine in Greece, as every person who was satisfied with the response he obtained made an offering of some costly donation to the Temple.

Old Irish Plate.—A paper was read lately before members of the Society of Antiquaries on Dublin silversmiths, and Colonel Alexander has lately lent to the Dublin Museum some specimens of 18th century plate, which have been placed beneath the fine specimens already there. The Irish plate of that period is exquisite. In England fine specimens of it may be seen at Bath, in the charming collection bequeathed to the town by a late baronet. There was much art in Dublin in the 17th century. The chimneypieces in many of the *grand seigneur* abodes were marvellous bits of sculpture, wrought by the chisels of Italians who settled in the Irish capital at that period. Their work exists, but in most cases has been removed to country mansions. Lord Langford bought much for his country seat.

THE SANITARY INSTITUTE.

At an examination in Practical Sanitary Science, held at Dublin on June 7th and 8th, 1901, two candidates presented themselves, to whom certificates were granted:—1901, June 8, Byrne, Thomas; 1901, June 8, Ward, George. At an examination for Inspectors of Nuisances, held at Dublin on June 7th and 8th, 1901, nine candidates presented themselves. The following three candidates were certified, as regards their sanitary knowledge, competent to discharge the duties of Inspectors of Nuisances under the Public Health Act, 1875:—1901, June 8, Mark, John; 1901, June 8, Cook, James; 1901, June 8, Hansahau, Patrick.

EXAMINATION IN PRACTICAL SANITARY SCIENCE.

Held in Dublin on June 7th and 8th, 1901.

FIRST PAPER.—11 A.M. TO 1 P.M.

1. What is the weight of a cubic foot of (a) air at atmospheric pressure, (b) carbonic acid gas at atmospheric pressure? Why does not a heavy gas remain at ground level? What causes winds?

2. Describe the principle of a Mercurial Barometer, and of an Aneroid Barometer. Illustrate your answer by sketches.

3. State fully the advantages of mountain climates as compared with those of plains. How is temperature affected by altitude?

4. What is meant by "ground air"? Why is it impure, and what precautions are taken to prevent it entering dwellings?

SECOND PAPER.—2 P.M. TO 4 P.M.

The same value is attached to each question.

5. Describe the agencies at work in the purification of water by means of sand filters on a large scale. Describe the cleansing and re-starting of such a filter.

6. How is the combustion of fuel affected by the air supply? What are the causes of smoke?

7. Explain fully the advantages and disadvantages of heating by (a) open gas fires, (b) gas-stoves, (c) naked gas jets.

8. What is the discharging capacity (in cube feet, per minute) of a 2-feet circular sewer, running full—the inclination being 1 in 500? Give the formula used, and show the working.

EXAMINATION FOR INSPECTOR OF NUISANCES.

The same value is attached to each question.

Held in Dublin on June 7th and 8th, 1901.

1. What do you understand by the following terms:—"Urban district," "contributory place," "private improvement expenses," "rack rent," "statutory powers," "jurisdiction," "public place," "premises," "curtilage"?

2. What are the powers of a Sanitary Authority respecting conveniences used in common by two or more families? State under what Act the powers are given, and whether they apply to both urban and rural districts.

3. Describe a Canal Boat Register, and the certificates issued upon the registration of a canal boat. How many such certificates are issued for each boat, and to whom are they given?

4. A schoolroom has been closed on account of infectious disease amongst the pupils. What directions would you give as to the disinfection and cleansing of the room?

5. A contaminated water supply forms temporarily the sole supply of a small hamlet. Discuss the relative merits and practicability of the different means for making this water fit to drink.

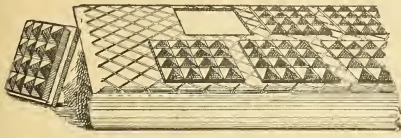
6. Give the comparative advantages and disadvantages of a "combined" and a "separate" scheme of sewerage.

7. Of what materials may soil pipes and ventilating pipes be made? State the advantages and disadvantages of each.

8. What are the principal points to be observed in the laying of a house drain where it passes under the house?

The cheapest English bricks are produced in Worcestershire, but those most esteemed come from Sussex. About 30,000 hands are employed in brickmaking in the United Kingdom. There are 384 bricks in a cubic yard, and 4,356 in a rod. An interesting article on the subject appears in Ure's "Dictionary of Arts."

INTERCHANGEABLE RUBBER STAIR TREADS.



Consisting of Metal Frame, fitted with Rubber Blocks, which can be removed when worn, in a few minutes.

Suitable for WAREHOUSES OFFICES, HOTELS, &c.

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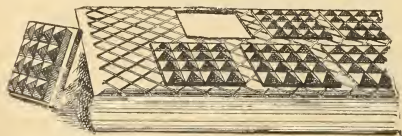
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With a Large stock of ready-made Mortar of all kinds, Fresh water, Sand Bank do., Concrete Gravel, Irish Cement, Concrete Window Sills, all sizes. Also a large stock of old and new Doors, Sashes and Frames, Mahogany Doors and Porches, &c., &c. **AT LOWEST PRICES.**

TRADE JOTTINGS.

A Serious Source of Danger on Stairs.

We have more than once referred to the dangers arising from the use of common cast-metal protectors on the heads of stairs. How to obviate this danger is frequently a source of much speculation and doubt upon the part of the architect. One of the best and safest appliances now being used by many well-known architects and engineers is a very serviceable invention of a patent rubber stair tread, made by Mr. W. Gooding, of the North Road Works, Holloway,



London, N. The idea is an excellent one, and that we are not exaggerating the need for some such device to ensure a safe foot-hold is proved by the fact that 20,000 accidents to limb, and loss of life, occur annually in Great Britain, brought about simply by the feet slipping. This is a lamentable record, and one that ought to awake public attention. The greatest number of accidents occur through the feet slipping upon door steps and stairs. The reason of this is, that if there is the least want of foot-hold in treading, the body loses its equipoise. So that, whether ascending or descending steps or stairs the fall is invariably attended with bodily injury, and too frequently with fatal results. Many of the leading establishments actually have door-keepers to see that customers and visitors are safely passed in and out where there are entrance steps. This may seem a costly attention, but proprietors evidently find it to their advantage, and to the satisfaction of their customers, to attend to their personal safety.

One of the best safeguards against accidents arising from foot slips, is the adoption of the Patent Interchangeable Rubber Stair Treads, which have given unflinching satisfaction all over the world. These treads have many advantages in their favour. The first and chief feature is that they are self-fitting, and interchangeable from one position to another, which is a very important matter. The next advantage is that the wearing surface is elastic to the tread, so that they prevent the feet from slipping under any consideration. The blocks can be easily renewed, when worn, by anyone in a few minutes. These treads have, moreover, the great advantage of being adaptable to all public places and positions, whether on stone, iron, or wood steps and stairs, floors, pavements, landings, corridors, vestibules, &c., and, being elegant in appearance and durable in wear, they leave nothing to be desired. In a word, they supply the long-felt want, and may be adopted with the perfect assurance that they will prevent accidents in all seasons, and in all places, whether public or private.

As a result of a series of tests carried out by the direction of Mr. Frank Furness, a well-known American architect, the relative durability of certain flooring materials has been determined as follows:—Sample blocks of each of the materials were prepared with surfaces of 6 square inches, and these were placed downward upon a horizontal iron rubbing wheel, contact with which was ensured by a pressure of 3½ lbs. to the square inch, a suitable frame holding the blocks loosely in place, and preventing them rotating; the wheel was run for 60 minutes at 75 revolutions per minute, the face being freely supplied with the best sharp-rubbing sand and water. Strange to say, the best results were shown by an interlocking rubber tile, which lost only one-sixty-fourth of an inch in thickness by one hour's grinding, while a teak slab was reduced thirteen-sixteenths, and a soft white pine slab seven-sixteenths of an inch in the same time. A number of specimens of marble were also tested, but the average resistance of these was somewhat below that of the woods, of which oak and Oregon pine each lost five-eighths

of an inch. This affords one more testimony, if such were needed, of the value of rubber as a material for stair treads and similar purposes.

The particular patent to which we have made reference is equally adapted for use in private and public buildings, ships, vehicles, etc. The London Fire Brigade have adopted them for all their engines, hose cars, etc.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their Patent Manchester Grates and Special Inlet Panels to the Basford Workhouse, Nottingham.

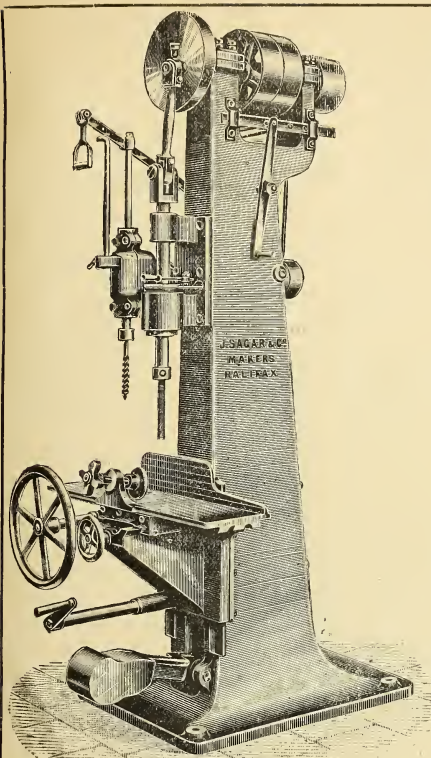
Mr. James O'Dea, who has carried on the business of the firm of Gleeson and O'Dea since the death of Mr. Edward Gleeson, has found it necessary, owing to increasing business, to co-opt a partner, and he has accordingly arranged with Mr. Joseph A. Foley, who succeeded Mr. Gleeson in the management of the Retail Department of Messrs. Thomas Henshaw and Co., Limited, Christchurch-place. Mr. Foley, having subscribed the required capital, entered into the business as partner on the 1st instant. The firm will trade under the name of GLEESON, O'DEA, AND CO. from that date, the Partners being Mr. James O'Dea, and Mr. Joseph A. Foley.

The Patent Vulcanite Roofing and Asphalte Co., Ltd., of Laganvale, Belfast, and 2 Union-street, E.C., are issuing what is in the main an album of excellent photographic process engravings showing a large number of important buildings on or within which Vulcanite has been used. There are also several useful reproductions of sectional drawings showing various applications of the material, with which, it is stated, more than three million super. feet roofing has now been covered. The album includes some most convincing testimonials as to the fire-and-water-resisting and other valuable qualities of Vulcanite, which, it may be noted, has been largely employed by H.M. War Office authorities, Architects and builders desiring a copy of this handsome booklet could no doubt obtain a copy on application, enclosing professional or trade card.

Messrs. Goodall, Lamb, and Heighway are to-morrow completing at the Kursaal, Southend-on-Sea, the largest spring dancing floor in England. It has been entirely constructed by and covered with one inch tongued and grooved parquetry, with a specially designed ornamental centre of oak, walnut, and sycamore in the form of a double star. The filling is what is known as the ship-deck pattern, with the joints matched, and the border is about 3 feet wide, of a bold pattern, in oak and walnut. The portion where the public would stand on the outside of the border is laid with the ordinary herring-bone pattern, and is on the same level as the dancing floor. Mr. Geo. Sherrin is the architect. Large floors have been laid by the same firm at the Winter Gardens, the Tower, the Imperial Hydro., Blackpool, and also one just completed at Smedley's Hydro., at Matlock Bath, which, although considered exceedingly large floors, do not come up to this one by several hundred feet. The springs used for this floor are found, after very long experience in manufacturing these spring dancing floors, to be the best, and are the ordinary carriage spring of the strength necessary for the use of the floor. The deflection of the springs cannot exceed ½ inch, and they are so arranged that they cannot be strained.

SMOOTH RUNNING SHAFTING AND EFFICIENT MACHINERY.

In order that machinery may run smoothly and give the best results, it is essential that the shafting, counter-shafting, clutches, etc., shall be efficient. Nothing is more wasteful than ill-managed shafts, non-suitable in size, or so planned as to waste power. In very many builders' workshops, for instance, the shafting is often so laid out as to require inordinately long drives and lengthy shafts. In many instances the experienced would, at a glance, see cases where the use of a cross-shaft would lessen trouble and economise power. Here is where a good pattern of a well-made friction clutch comes in. One of the best clutches on the market is "Heywood and Bridge's Improved Patent



Power Mortising and Boring Machine

[S.M.]

Designed specially for Joiners,
Sash and Door Makers, and for
similar work.

*Runs at a high speed, easy to operate,
and is a profit maker.*

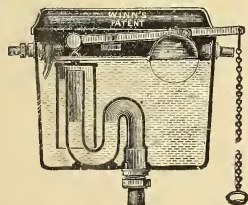
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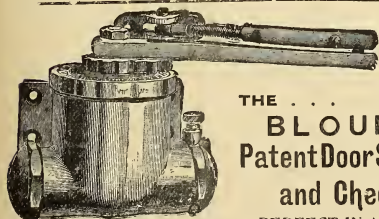


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Copper and Galvd. Cylinders & Boilers

**21 and 22 CHRISTCHURCH PLACE,
DUBLIN.**

Gleeson's Patent Lifting Fire for Close Ranges,
Simplest and Best.

Friction Clutch." Amongst its claims on the attention of practical men may be instanced, amongst others, the following:—

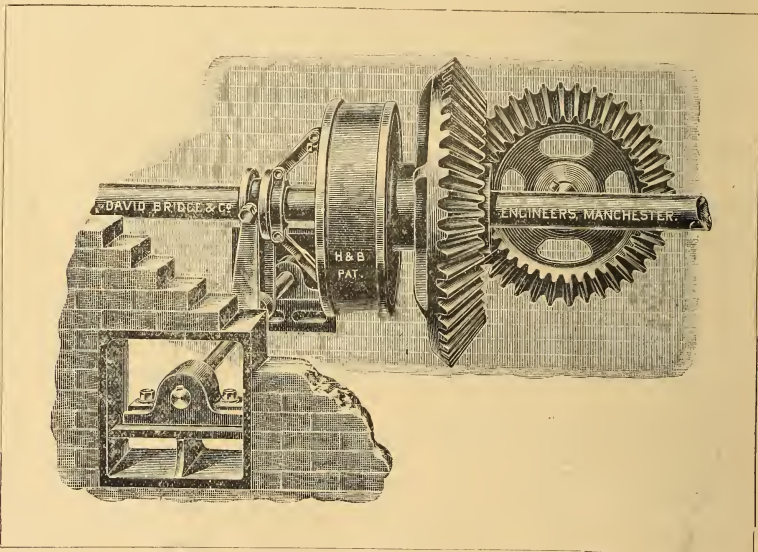
1. It is self-contained, and no loose parts to clatter—will revolve and drive either way.
2. Easily operated, no end-thrust, self-holding when in gear, easily released, and perfectly clear when out of gear.
3. Of a perfectly-balanced design, cannot wear out of truth; this is essential when running at high speeds.
4. The most quickly-adjusted clutch in the market; can be adjusted whilst the engine is running, when driving with the shell.
5. Will start and stop machinery and gearing without any shock or jar with full load on—no matter what speed or power.
6. Capable of stopping machinery or gearing instantly in case of accident.
7. Has no complicated parts—self-contained; lubrication specially attended to.
8. Will work in any position, and perform its work equally as well when used as shaft frictional coupling.

mony, merging in richly-developed foliage a happy reference to the thistle, rose, and shamrock.

The upper portion of the exhibit rises from a moulded cornice, and consists of pediments, minarets, and large central dome. The treatment of the pediments varies in each case. Crowning the one at the north end is a fine example of ornate casting, specially adapted to embrace a monogram and crest; while, to complete the two sides, there are handsome signboards in wrought and cast-iron. To relieve these and secure an effectual terminal finish in the centres, a well-developed casting of the Royal Arms in full Heraldic colours surmounts the one side, while a statuette of her late Majesty, supported right and left by the British lion, dominates the other.

The effect of the upper portion is graceful in the extreme. With a fine touch of the "Oriental" at the corners rise four ornamental minarets of graceful proportions, formed of delicate open scroll-work, and enriched by fringed ornament, while the spire of each gives opportunity for displaying various types of the firm's finals.

The main, or central, dome, as seen from the gallery level,



HEYWOOD AND BRIDGE'S IMPROVED PATENT FRICTION CLUTCH.

9. Constructed with greatest care—the best materials and workmanship throughout. The makers are Messrs. David Bridge and Co., Engineers, Castleton, Manchester.

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MESSRS. WALTER MACFARLANE & CO., SARACEN FOUNDRY, GLASGOW.

The exhibit of this firm is a striking example of artistic iron-founding. While its minarets and central dome absolutely command the attention of everyone entering the machinery hall, a closer inspection only reveals the fact that every detail in design and workmanship has been carried out with the greatest care and thought. Taking the form of a rectangular pavilion, it is supported by 20 ornamental pillars of varied design; these carry a variety of spandrills and arches, some of which demonstrate most effectively the skill, alike of designer, Pattern-maker, and moulder. The treatment between the coupled columns at corners and centres, as well as the frieze, is in close har-

mony, but can only be adequately realised when one stands beneath it. The chaste design and colouring of the painted and stained-glass presents a very fine picture. The internal effect of this central feature is enhanced by a combination of cast and wrought-iron railing, panels, terminals, etc., and from this a series of electric light fittings are suspended.

The exhibit further embraces a variety of individual castings for various uses, such as railings and gates for villa and mansion, verandah and conservatory castings, lamp pillars and brackets for oil, gas and electric light. One highly-artistic example may be noted in this class—viz., the base portion of the London County Council's new electric light pillar, which has been specially designed to adorn the Victoria Embankment.

Among many other fine examples, a handsome staircase, with scroll railings, newels, and lanterns, occupies a central position of the stand. But, while there is such interesting variety in the ornamental, the ordinary requirements of the day are strongly in evidence, for we find sectional examples

MACFARLANE'S CASTINGS

**ELECTRIC LIGHT
PILLARS**

BANDSTANDS
RAILINGS AND GATES
STABLE FITTINGS
RAILWAY BRIDGES AND ROOFS
CONSERVATORIES
AND CONSTRUCTIONAL
WORK OF EVERY DESCRIPTION

WALTER MACFARLANE & Co.,
SARACEN FOUNDRY,
GLASGOW.

WALTER MACFARLANE & CO.
GLASGOW
SARACEN FOUNDRY

of their drain-pipes, bends, traps, and gullies, which in this age of sanitary science will certainly appeal to many, more particularly as they are shown treated by the glass-enamel process now so largely adopted for all high-class house-drainage.

Stable fittings, in small, but good, variety, find a place, and in this connection it may be mentioned that this firm have furnished the Model Farm buildings in the Exhibition grounds with their fittings specially suited for farmhouse and ordinary stabling, also with the "Byre Fittings."

Apart from the exhibit within the Exhibition Buildings, Messrs. Macfarlane and Co. have erected on the site of the Old Fairy Fountain in the grounds a fine sample of their structural work in the form of a decorative or memorial fountain. The very fine proportions of this structure, and more especially the grace and character expressed in the four life-size figures of Art, Science, Literature, and Commerce, should not fail to bring great credit to the firm.

Their ornamental spiral stairs are found in various parts of the buildings, whilst throughout the grounds some 60 complete electric light pillars and brackets are erected, having been lent to the executive by this firm, who also provide several drinking fountains for the use of visitors. Altogether their efforts towards the attractions of the Exhibition are calculated to fully maintain their world-wide prestige for high-class work, so aptly described in previous records as "Sharp, Clean, and full of Character."

NEW BOOKS.

COLEMAN'S ARCHITECTS' PRICE BOOK. London, 1901; E. and F. M. Spon, Ltd., 125 Strand, W.C. Price, 5s.

A very handy and useful little pocket book is this by Mr. T. E. Coleman, F.S.I. Neatly bound in blue leather with gilt edges, it is admirably adapted for the pocket or the hand-bag.

The method of pricing does not follow the usual conventional fashion of works such as Spon's well-known price book, but gives a large amount of really practical, though condensed, information likely to be of great assistance in making out an architect's or engineer's general estimate in small space. It is the only book we know of which proceeds on these lines, and as such we warmly recommend it to our readers.

Mr. Coleman has been most systematic and careful in marshalling his facts and figures, and while compressing the details of the cost of various classes of work, he points out how local conditions and the fluctuations of the market must operate in modifying any standard of pricing. We should add that the whole of the subject matter has been treated alphabetically—making it very easy of reference.

WEIGHTS AND MEASURES OF SHEET LEAD. By James Alexander. London, 1901; E. and F. M. Spon, Ltd. Price, 1s. 6d.

A very useful little work, containing a series of tables of the weights and measurements of sheet lead. Should be of great utility to all who have to measure lead.

THE SHIP OF THE CENTURY, NELSON'S FLAGSHIP, "FOUDROYANT." Manchester, 1901; Goodall, Lamb, and Heighway, Ltd.

We have received a very interesting account of the life and works of the brave old "Foudroyant," Nelson's flagship.

She was laid down at Plymouth in 1789, but it was not until the spring of 1798 that she was ready for launching, and in the June of the same year the grand old vessel was put into commission by Sir Thomas Byard; the crew numbered 100. In October she put to sea, and from that day until the summer of 1892 she was borne on the books of the British navy—a record of 94 years' service! In her construction no fewer than 200 English oaks were used. Her walls were three feet thick, and altogether she was a triumph of the ship-builders' art of her day. Never again shall be seen such a picture as the "Foudroyant" must have presented when standing out to sea, her sails all unfurled in a glory of spreading canvas. Those who

would know more of her and her gallant commanders, and the tough old tars who fought and sailed her so well in days of yore, we must refer to the history itself, which is a beautifully illustrated and brightly written little work.

To-day all that remains of the fine old ship is being cut up by Messrs. Goodall and Heighway, and made up as curios in such forms as tables, chairs, cabinets, etc.—at least a happier fate than has befallen many another equally fine old ship, for the "Foudroyant" has been at least spared the indignity of the German "knacker."

We have no doubt Messrs. Goodall will be happy to send a copy of this unique little engineers' souvenir to any architect desirous of possessing what is well worthy a place in any library.

HINTS TO YOUNG VALUERS: A Practical Treatise on the Valuation of Property. By Anthony Richard Cragg, F.G.S., Agent for the Maristow Estates, South Devon; Holders of Honours Certificate and Medal (Principles of Agriculture), and Certified Lecturer in Agriculture, Science and Art Department, South Kensington; Winner of Silver Medal and first prize for Homestead Designs at the London Dairy Show, 1885, and of Lord Walsingham's Special Prize for Silo Designs at the Norfolk County Show. With explanations of the legal principles involved by James Robert Vernam Marchant, M.A., formerly Scholar of Wadnaw College, Oxford, of Gray's Inn, and of the Oxford Circuit, Barrister-at-Law; Joint Editor of the Second Edition of Darby and Bosanquet on the "Statutes of Limitations." London: the Land Agents' Record, Limited, 149 Strand, W.C., 1898. Price, 20s. nett.

Why the authors of this admirable work should have chosen such a title for it is not easily to be explained. That it contains much information useful to "young valuers" is clear after a perusal, but it is more than that—for it appears to be rather of the character of a most comprehensive standard text on the subject and science of valuation. That the book has now reached a second edition is not to be wondered at, for it treats of the whole subject in a remarkably lucid and masterly fashion. Quite evidently too it is the handwork of men who are thorough masters of what they are writing about.

Exigencies of space forbid our doing justice to the long series of excellent chapters which deal with every aspect of the question whether from the landowner's and tenant's or agent's, the architect's and engineer's, or the professional valuer's point of view. The respective chapters on Dilapidations, Building Contracts, and last, but not least, the powers of sanitary authorities, are a perfect mine of useful information.

The manner in which the legal part is incorporated with the practical part, and the numerous examples of valuations given, will render it valuable, especially to young surveyors and valuers.

Engineers, architects, surveyors, and all professional men who are liable to act in the capacity of arbitrators, assessors, and valuers, will find in its contents a fund of information of nearly universal character. The forty-six chapters into which the book is divided comprise almost every general case which could be submitted to the decision of any single individual, or of any collective tribunal competent to investigate it. The various methods of valuation are successively treated of in detail, and their application to sale, rental, mortgage rating, compensation, and other accompanying liabilities fully discussed and explained. The authors have paid careful attention to the questions, differences, and, not infrequently, difficulties which crop up in dealing with transfers of the tenancy of farms and other property. The valuation of large and small landed estates, of land for residential purposes, manions, and houses, ground-rents and reversions, are dealt with in a manner commensurate with their importance.

In instance as worthy of special praise the chapter on the powers of sanitary authorities, we may add that it is treated in a manner so excellent and clear as to make it absolutely unique in the literature of the subject. Our only regret is that we are debarred from giving our readers a better glimpse of the work. But perhaps that is so much the better for them; there is the book itself to refer to, and we have no hesitation in saying that no one whose professional duties require him to deal with the matters treated of can afford to be without it. We offer our warmest congratulations to the joint authors, for they have produced what there is no manner of doubt will be a standard on valuation, etc.

THE IRISH BUILDER.

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, SANITATION,

ARTS AND HANDICRAFTS.

Every Second Thursday.

[Established Jan. 1859.]

No. 997—Vol. XLIII.

HEAD OFFICE

JULY 18, 1901.

11 LOWER SACKVILLE ST.,
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

The first granite ever sent from the United States to Europe will be shipped to Scotland next month from Stonington, Maine. The American quarry companies say they can sell Maine granite in Glasgow, Aberdeen, or Liverpool at 4s. per foot, whereas Scotch granite costs about 9s.

On the 9th July, 1811, ninety years ago, Inceledon, the Earl of Westmeath, and the Hon. A. H. Hutchinson, President of the Beefsteak Club, were amongst the guests who were entertained at the dinner of the Hibernian Catch Club, at Morrison's Hotel, now in course of demolition.

An excellently arranged catalogue of the books in the City of Dublin Lending Library, Charleville Mall, has been compiled by Mr. P. J. Hoey, librarian, and published through Messrs. Cahill and Company, Great Strand-street. There is added to the catalogue a very handy index to the books of fiction scheduled in the preceding pages.

An inmate of the Rochford Workhouse, named Thomas Lambert, has carved a handsome font with panels of his own design during his spare time. The font will be dedicated in the workhouse chapel by the Rev. A. N. Bredin, who says that the font is a marvel of skill.

The preamble of the Dublin Equalisation of Rates Bill has been passed by the Committee of the House of Lords; but the contribution of the townships towards a "levelling" of the rating has been limited to 6d. in the £.

A gentleman of much experience, to whom we lent "Hints to Young Valuers" (reviewed in our last issue), gives us, as his opinion, that it is the very best book on the subject which has come under his notice.

A "side light" on township management was afforded, in more senses than one, by the recent fire on Pembroke-road. Half-an-hour elapsed, we believe, ere the "Fire Brigade" reached the spot—rumour says the delay was due to the Brigade horse having become so corpulent that it could not be introduced into so unwonted a position as between the shafts of a horse carriage.

At the fire—so says another report—the Inspector of Police noticed a youth standing on the hose. In stentorian tones he commanded one of his minions to seize the rash offender. "Wisha, man," says the Captain, "sure he's only standin' on a hole in the hose pipe to stop it spoutin'." The damage done by the fire is calculated at £700.

The Pembroke U.D.C. have summoned the French Consul to show cause why he should not be compelled to provide sanitary accommodation in the stable attached to the Consulate in Pembroke-road. At the Police Court the Consul pleaded that the Consulate is French territory, and, as such, outside the plaintiffs' control, and the jurisdiction of British Courts. Whether it is an "Isle de France" or not—the Council can't force anyone to put up a water-closet. The case has been adjourned.

The new Trinity College Union Building is progressing apace. The roof has been some time slated. The Architect is Sir T. Drew, P.R.H.A. The style of the work follows the character of the French renaissance—a type which struck us as being a little out of keeping with the solidity of the fine English renaissance work of Chambers and his predecessors, which surrounds it.

An unusual haulage contract has been recently performed at Sunderland. A house of two storeys was bodily removed from its site and carted off to Newcastle, twelve miles away. An American undertook the work; and the structure was underlaid with scaffolding, under which a trolley was subsequently run. Protruding from each side was a platform. On the one side a magnificent team of heavy horses was attached, and on the other horses and their attendants moved, until on the principle of the see-saw, the balance was obtained, on which the team was started, and the whole hauled off.

No decision has as yet been arrived at in respect of the Queen Victoria Memorial for which five selected architects have submitted designs. It would appear as if the competition is to be regarded as but tentative.

The second number of *Irish Masonry Illustrated* admirably maintains the very high standard set on its first appearance. There is a full-page portrait of the Earl of Shaftesbury, Provincial Grand Master of Antrim, a group of the Masters of Dublin Lodges for 1900, an illustrated account of the recent Festival Service in Clontarf Parish Church, and articles dealing in interesting style with the careers of Sir Charles Cameron, Mr. James H. North, J.P.; Mr. R. P. T. Logan, J.P.; and the Rev. F. St. John Corbett. An account of the Masonic Female Orphan School will also be read with interest. The illustrations are a very strong feature.

The International Association for the Advancement of Science, Arts and Education will hold its second international meeting at Glasgow in the University and in the International Exhibition, from 29th July to 27th September, 1901. Besides serving as a link among universities and learned societies, etc., one of the most important functions of the meeting will again be, as at Paris last year, to study and interpret the matters of scientific, geographic, and other interest afforded by the Exhibition, by means of lectures and conferences, with demonstrations and visits under skilled guidance. The various national groups which co-operated last year at Paris will again be represented at Glasgow, and their lectures and conferences, etc., will include pure and applied physics and chemistry, electricity and engineering, agriculture and forestry, geography and colonisation, hygiene, Scottish history and archaeology, fine art, etc. Much attention is also being paid to education in its many branches:—Child study, nature study, methods of science study, modern language study, manual and technical education, museums, geographical education, history and organisation of secondary education, the whole concluding with a series of conferences on immediately "realisable progress in education." The general secretary is M. Liard, Permanent Secretary for Higher Education, Paris, assisted by Professor Patrick Geddes.



Ardee.—LABOURERS' COTTAGES.—There were no tenders for the labourers' cottages to be built at Greenan (1), Bengers-town (2), and Woodtown Upper (1). The cottages were ordered to be re-advertised for that day fortnight—9th July.

Clonliffe (Dublin).—A new I.C. Church is to be erected at Clonliffe in place of the old iron church which has so long served the needs of the locality. Mr. R. Caulfield Orpen is the architect.

Clonmel.—APPOINTMENT OF ARCHITECT.—Dr. Harvey read a letter from Mr. Fuller, architect, Dublin, again agreeing to forgo his claim for fees on previous building schemes if appointed architect for the present scheme. A letter was read from Mr. Hackett, C.E., saying that he was jointly interested with Mr. Fuller in the previous schemes, but he would also withdraw all claims for fees if Mr. Fuller was appointed. Dr. Harvey, continuing, said the appointment of architect had been postponed from last meeting, so that he might write Mr. Fuller. There were two motions on the agenda, one to have an architect appointed, and another to have Mr. Fuller appointed if he would forego his claim for fees.—Chairman: Is it finally arranged that we go on with the buildings?—General Massy: You can do nothing until you appoint an architect.—Mr. Cummins: We have agreed to go on with the buildings, and I move we appoint an architect. (This was agreed to).—Mr. Webb moved the appointment of Mr. Fuller, saying otherwise they would be liable for a big claim for fees. They had had counsel's opinion, and they said they were bound to pay.—General Massy seconded, in order to save the ratepayer's money, and said if they did not appoint Mr. Fuller, they should face law proceedings and lose a lot of money.—Father Scanlan: Have all the applications for this position been read and considered?—Mr. McLoughlin (Clerk): Yes, at last meeting.—Mr. Maher said it looked strange and inconsistent that the present ratepayers should be making up for the deficiencies of previous boards. This man's claim should have been paid.—Mr. Cummins: Not until he made it.—Mr. Maher: If men have money outstanding they had a right to claim it (laughter).—Mr. Webb's motion was passed.—Fr. Scanlan thought they ought to instruct Mr. Fuller that the Committee wanted a plain building, and not an ornamental one.—Dr. Harvey said they should have the approval of the Lord Lieutenant to the plans first, and then they should get permission from the Local Government Board to borrow. They were mixed up between the two. It would be better to instruct him (Dr. Harvey) to see Mr. Fuller, and explain what the Committee required, and what it would be done for. The sketch plans would not cost more than one per cent. if they were not used. He was going to Dublin himself that night, and would see the officials as to the proper course to be adopted, so that things would be regular.—Father Scanlan: We only want to build for what is actually necessary, and don't want any useless ornamentation.—Dr. Harvey: That is what I want to explain to him.—Father Scanlan: We don't want any baby houses, or houses for show.—Mr. Murphy: We are told by the Government architect that the building would cost £13,000, and I don't see why we should increase it to £15,000. I think we should confine ourselves to the £13,000.—Father Scanlan: We should only have best rubble masonry, and it will be done for less than £13,000.—General Massy: £15,000 is the extent to which the County Councils have agreed to go.—The matter dropped.

Carriek-on-Suir.—THE FEVER HOSPITAL.—The following notice stood in the name of Mr. P. J. Kelly:—"I will move this day fortnight, or cause to be moved, that application be made to the Local Government Board for sanction to a loan of £500, to be repaid in 50 years, for alterations and improvements

to be made in the Fever Hospital of the Workhouse." Mr. Kelly reduced the figure to £399 19s., and proposed his amended motion in an able speech.—Mr. Holohan seconded.—Mr. O'Neill proposed an amendment that the amount be reduced to £200. He considered this expenditure for the nuns unnecessary. Mr. Kelly's proposition was carried by 21 votes to 6.

Drogheda.—DULEEK DISPENSARY.—The Board's architect submitted plans for the above dispensary residence, and it was ordered they be sent to the Local Government Board for their inspection and approval.

Drogheda.—LABOURERS' COTTAGES.—The following was read at a meeting of the Corporation:—"Gentlemen,—We recommend that tenders be invited for the erection of fourteen cottages at the corner of Platten-road and Duleek-street, and twelve cottages in Patrick-street, in accordance with the plans and specifications already prepared.—Signed JOHN DOWNEY, Chairman." Alderman Keely moved that the report be adopted.

Dublin.—The new Victoria Eye and Ear Hospital in Adelaide-road has been begun. The architects are Messrs. Carroll and Batchelor, and the builders, Messrs. P. and J. Good, Ltd.

Enniskillen.—The L.G.B. wrote inquiring the reasons for postponing for six months the question of providing a medical officer's residence for Dromiskin. The Clerk was instructed to inform the L.G.B. that the matter was postponed owing to the committee being unable to agree as to the most suitable site for the proposed residence.

Killybegs.—Tenders were received by Mr. E. J. Toye, architect, Strand, Londonderry, on the 15th inst., for building a house at Killybegs, for Mrs. Margaret T. MacGinley.

Larne.—SCREVOYER'S REPORT.—Plans for the following were passed—Alterations at the manager's offices on the premises of the Larne Gas Company, villa on north side of Manhattan house for Captain Wisnom; alterations and new gateway at Quay lane from premises of Henry Mc'Neill, Limited. The following letter from Mr. Samuel Crawford, Main-street, was read:—"Enclosed please find sketch of store at rere of old premises, which I propose renovating so as to enable me to start business until such time as the front portion of premises is built." After some discussion the sketch was passed. With reference to the alterations at the Gasworks, Mr. R. N. Carson, secretary, wrote:—"I beg to enclose plans in duplicate of extension of kitchen at rere of the dwellinghouse connected with the works for the information of the Urban Council. Re sewerage—With reference to your letter of the 3rd inst. on this subject, when may we look for the purification of the 'Goat?' The house is in a most unsanitary state."

Newry.—THE WORKHOUSE PLANS.—The plans for the rebuilding of the workhouse were upon the table. The clerk was instructed to summon a meeting of the building committee.

New Ross.—A project is on foot to build a new market-house. The new R.C. church occupies the site of the old market-house, and the need for a well arranged, modern structure is much felt. Messrs. James Pearse and Sons are about to erect two side altars in the new church. Additions to the workhouse are also talked of.

Clonmel.—THE PROJECTED SANITARY WORKS.—Mr. Beary said that he had just got the plans and specifications from Mr. Hackett, C.E., of the proposed sanitary works at the workhouse, revised according to instructions. He states that they are to be taken in conjunction with those already approved of by the L.G. Board. The cost according to the revision he estimates at £3,150, adding that it would be impossible to give a closer estimate till the quantities were revised. The clerk was directed to forward the plans, &c., to the L.G. Board.—Adjourned.

THE SOCIETY OF ARCHITECTS. VISIT TO OXFORD.

The arrangements which were being made for the above on July 27th are cancelled owing to insufficient names having been received.

ANSWERS TO CORRESPONDENTS.

JAMES DARRE (Cork).—Applications should be addressed to the Commanding Royal Engineer, Curragh Camp.



Galway.—The report of Mr. J. H. H. Swiney, M.Inst. C.E. of Belfast, upon the water supply of Galway was read at a recent meeting of the Urban Council, and we take the following from the *Galway Express* of the 29th ulto:—"Mr. Swiney's report on the Galway water supply was submitted to the Urban Council on Thursday. It is a most important and lucid document. Mr. Swiney is evidently impressed by the 'present deplorable state of the water supply,' and he describes several remedies. His recommendations may be summarised as follows:—There must be a new reservoir built somewhere; Lough Kip is the best gravitation supply available, and if he had been asked to devise a new supply, Mr. Swiney is not sure that he would not have recommended it; its peaty flavour, however, puts it out of court. Mr. Swiney thinks on the whole it is better to stick to the present supply; his advice for its improvement is to buy one of the derelict water powers in the city and put it to use in helping to pump the supply to the new reservoir. Mr. Lydon's pet scheme of a Lough Atalia tail race he describes as simple, ingenious, but on the ground of cost it must be abandoned. The cost of the various schemes recommended, Mr. Swiney puts at from £12,500 for pumping scheme, which is the cheapest, to £17,485 for the Lough Kip scheme, which is the dearest. Whichever scheme is adopted, whether pumping, electric, Lough Atalia, or Lough Kip—and the probability is the one adopted will be the auxiliary pumping scheme, utilising some of our waste water power—the water rate is bound to go up considerably. It is 1s. 1d. now, and the chances are it will go up to 1s. 4d. or 1s. 5d. But the water supply must be improved, and that quickly at whatever cost. The subject was too large to be grasped at one sitting, and the Urban Council are to have the report printed and digested, and meet to discuss it at a special meeting."

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Why were the Pyramids of Egypt Built?

Aristotle's opinion, now generally adopted (Pol. v., ii.), is that the Pyramids were built "to keep the people well employed and poor," because "it suits tyranny to reduce its subjects to poverty, that they may not be able to compose a guard; and that, being employed in procuring their daily bread, they may have no leisure to conspire against their tyrants." Herodotus states that 1,600 talents of silver were expended in providing the workmen with leeks, onions, and other food, during the building of the great (Cheops) pyramid alone, and that one great object of the Egyptian rulers in erecting this and other stupendous monuments, was to prevent the evils of over-populousness by accustoming the lower orders to a spare diet and severe labour. Pliny and Diodorus Siculus agree in stating that 360,000 men were employed twenty years in erecting the Pyramid of Cheops. It was at one time supposed that the pyramids were the granaries of Joseph, but the smallness of the rooms, and the time required in building, confute this opinion. The Arabians generally think they were built by King Saurid, before the Deluge, as a refuge for himself and the public records, from the flood. Josephus, the Jewish historian, who wrote A.D. 71, ascribes them to his countrymen during their captivity in Egypt. Shaw and Bryant believed them to be temples, and the stone chest to be a tank for holding water for purification. Among other theories, an ingenious one ascribes the pyramids to the Shepherd Kings, a foreign pastoral nation which oppressed Egypt in the early times of the Pharaohs.

TRADE JOTTINGS.

The new schools, Lofthouse, near Wakefield, are being warmed and ventilated by means of Shorland's patent Manchester grates, patent exhaust roof ventilators and special inlet panels, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The very courteous representative of Messrs. Maw and Sons, the well known tilers, has lately been in Dublin calling on architects and builders. This old-established firm are hard to beat for the excellence of their tiles and the workmanship displayed.

Messrs. George Rome and Co., Moss-street, Dublin, have secured the contract for fibrous plaster work for the new mansion house, Ardmulchan, Nayan. Architects, Sir Sydney Mitchell and Wilson, Edinburgh. They have also recently finished the Glasgow Exhibition at a cost of over £22,000, and have many other works at present in hand—Concrete channels, new sewage farm, Curragh Camp; Portrane Asylum, plastering, concrete, steps, and granolithic work; Star office, Dame-street; Ulster Bank, Ballina, Co. Mayo; Bray Head Hotel, Bray; National Gallery and Museum, Merrion Square. They have also recently finished Letterkenny Cathedral.

Messrs. Jas. Pearse and Sons, sculptors, have just completed two new side altars for the Castlebar Church. They have also two side altars in hands for St. Mary's, New Ross, in addition to altars for Inchicore R.C. Church.

We understand that the Patent Vulcanite Roofing Company is about to be floated as a Limited Liability Company. The material has met with so much appreciation that the flotation promises to be a very successful one. The company is fortunate in possessing a particularly alert and courteous Dublin representative in the person of Mr. H. H. F. Cates, of 19 Ranelagh-road. Mr. Cates is always ready to afford architects and builders sound advice on the subject of the use of vulcanite roofing, yet never seeking to force its adoption on them.

Amongst some of the larger orders lately executed by Messrs. John Smyth & Sons, manufacturing jewellers and smiths, Wicklow-street, Dublin, are a solid silver sanctuary lamp for Letterkenny Cathedral—probably the largest silver sanctuary lamp in England or Ireland. Also a very elaborate pair of brass gates and set of six specially designed altar candlesticks for St. Mary's, New Ross—all made in their workshops by their own workmen.

We understand that the Irish Portland Cement Company is laying down a lot of new plant to cope with the increased demand for this popular brand. We hope at an early date to pay a visit to the factory.

A very useful invention for dealing with excavations and preventing the banks from falling in is the "Lingmel Extending Screw." The purpose of the "Lingmel Extending Screw" is to more securely protect the lives of those engaged in making excavations in the streets or in the cemeteries, especially where the soil is of a loose character. The method by which the invention is applied is an extending screw which acts as a sort of "flying shore" between the casings, thus suspending the ordinary supports by wooden props and wedges. The screw is said to be easily and quickly worked. The maker is Mr. James Milling, of Dashwood House, New Broad-street, London, E.C.

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The Church in Europe with the greatest number of aisles is the cathedral of Notre Dame, in Antwerp. This church is the only one in Europe with six aisles.

The New Smallpox Hospital, Tyne, Dock, is being warmed and ventilated by means of Shorland's Patent Double-fronted Manchester Stoves, with descending smoke flues and patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

OUR INTERVIEWS.—No. 4.

THE NEW PRESIDENT OF THE A.A.I.

Mr. Charles J. MacCarthy, F.R.I.A.I., is the City Architect of Dublin, and has recently been elected President of the Architectural Association of Ireland. In his capacity of City Architect most of our Dublin readers—architects and builders—come under his sway, for not until his *imprimatur* has been put upon the splendid creations of their brain, can these brilliant soarings of the imagination be translated into bricks and mortar. Mr. MacCarthy has his offices on the second floor of the fine old mansion at the head of Cork Hill, now known as “The Municipal Buildings.” It is a very charming Georgian house, built in the happy era of the last century, that period to which Dublin owes so much beautiful architecture and so many lasting memories of a brighter, gayer time; built of Portland stone, and carried out somewhat after the manner of Robert Adam, it looks at once refined and imposing. It was originally the town residence of the Earls of Cork. Later it passed into the hands of the LaTouche, the well-known Huguenot bankers; ultimately, many years ago, it was purchased by the Corporation of Dublin as an adjunct to the City Hall, though still often called “La Touche’s Bank.”

Mr. MacCarthy is a Fellow and Member of Council of the Royal Institute of Architects, where his active attention to duty at the Council Board is much appreciated. He is, of course, also a member of the Association of which he is president. He is a man of versatile taste, varying his membership of societies from the National Library to the Royal Zoological, of which latter he is a member of Council. He is the son of the late J. J. MacCarthy, R.H.A., Professor of Architecture at the Royal Hibernian Academy, and one of Ireland’s most famous architects. Often called “the Irish Pugin,” he completed many of A. W. Pugin’s works in Ireland, notably Ennis-corthy and Killarney Cathedrals, and adopted the spirit of Pugin’s idea of restraint and simple dignity when rendering ecclesiastical architecture in Ireland. Two of Dublin’s most successful churches (in addition to many others) are by the late J. J. MacCarthy. We refer to the Dominican Church in Dominick-street and the Capuchin Church in Church-street.

One of the most beautiful of modern Irish parish churches is that at the pretty seaside resort of Tramore, from the same master hand. Mr. Charles J. MacCarthy continued his distinguished father’s practice, mainly carrying out ecclesiastical works, until his appointment as City Architect in 1893. Since then he has, amongst others, designed the following important works for the Corporation of Dublin:—Fire Brigade Station, Great Brunswick-street (not yet begun); Fire Brigade Station, Dorset-street (approaching completion); Fire Brigade Station, Buckingham-street (recently completed); Bride’s Alley Scheme (now in progress)—accommodation for 210 families (say 1,000 persons) of the artisan class; Public Library, Charleville Mall; Fish Market; Coroner’s Court and Morgue (now in progress); Artisans’ Dwellings, White’s-lane Area; Artisans’ Dwellings, Blackhall-place Area; Reconstruction of the Disinfecting Depot at Marrowbone-lane.

In addition to such work, the City Architect has to perform important duties under the Public Health Act, as well as being responsible for the maintenance and care of the City Estate, which has a rental of £30,000 a year.

Personally, Mr. MacCarthy is very popular, and is certain to be a most excellent President of the A.A.I., and we anticipate for that body a successful era of work, under his guidance, in the coming session.

:o:

THE LOWTHER ARCADE, LONDON.

We understand that the proprietors of Coutts’s Bank have purchased the Crown lease of Lowther Arcade, which was placed in the market three years ago by the trustees under the will of the late Mr. William Bird, and was withdrawn from the sale at auction at £30,000. The Arcade, measuring 245 feet long and 35 feet high, and being lighted by a roof glazed with small domes carried by pendentives, was — together with the old Adelaide Gallery along its north side — erected after the plans and designs of Witherden Young, as a part of the extensive improvements effected in that portion of the Strand, the “Bermudas,” “Porridge Island,” and the neighbourhood

of the church of St. Martin-in-the-Fields, in 1829-31, in pursuance of the Act 7 George IV., c. 77 — Lord Lowther being Chief Commissioner of Woods and Forests at that time. W. C. Mylne acted as valuer on behalf of the Government, and Decimus Burton was architect of part of the new buildings in the West Strand quarter. The original Arcade had twenty-five shops, with six in West Strand and Adelaide-street, covering a total area of about 16,000 ft. superficial, and is held, under one lease of which 28½ years are still unexpired, at a ground rent of £1,270 per annum.—*Builder*.

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MUNICIPAL TRADING.

It will be remembered that a Committee of the House of Commons was appointed last session to inquire into the subject of municipal trading. It did not complete its inquiries, but it has not been re-appointed. As we pointed out last year, the report of a committee of this kind cannot alter the state of affairs. Municipal trading will extend

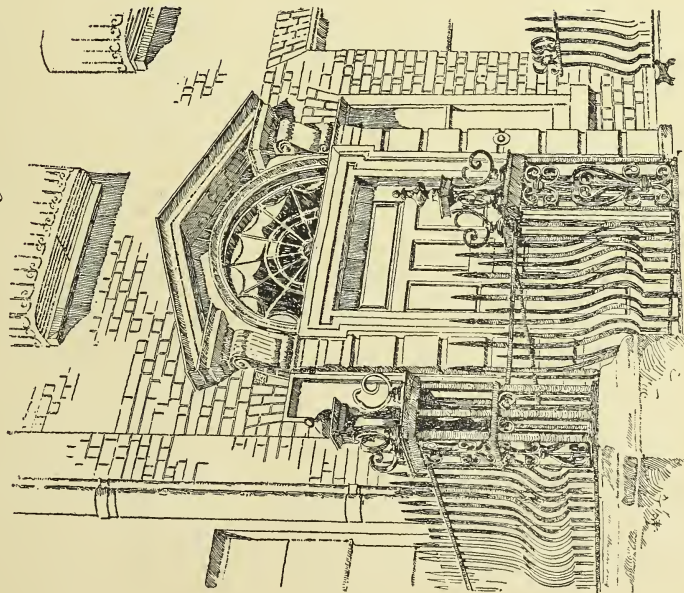
if the ratepayers and Parliament as a body sanction such extension. The limit of this extension will be put by the common-sense of the community. It is impossible, as it was said before, to formulate with precision any definition of legitimate municipal trading. But as soon as municipal corporations begin to carry on enterprises which are not for the benefit of the public at large, then we may expect to see the ratepayers and Parliament put a veto on their work. For the moment a kind of languid interest in this respect has made its appearance, but the fact that last session’s Committee was not re-appointed shows pretty conclusively that the Government is not impressed with the opposition to municipal trading. For the opposition comes largely from powerful trading companies who are anxious to obtain monopolies in electric enterprises and locomotion. The ordinary citizen is inclined to think he would be as well off if his municipality managed these matters as a company whose main object is dividend. We expect, therefore, not to hear much more of the bugbear of municipal trading.—*Builder*.



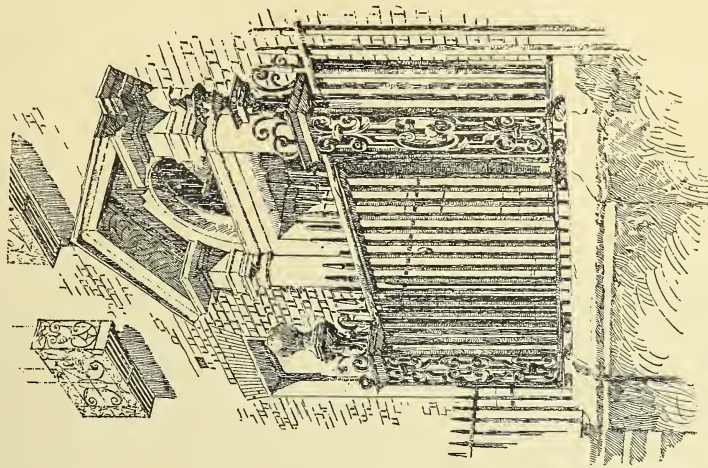
The New President of the Architectural Association of Ireland.

MR. CHARLES J. MCCARTHY, City Architect of Dublin.

Georgian · Ironwork · in · Dublin ·



· Doorway · in · Rutland · Square ·



Doorway · in · Upper · Merrion · St

INTERESTING DUBLIN. From "The Georgian Period."

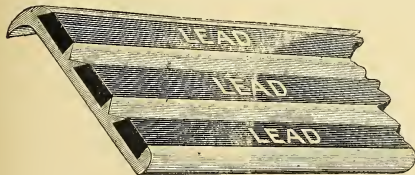
(Reviewed in this issue).

THE LIBRARY
OF THE
UNIVERSITY OF MICHIGAN

DANGEROUS STAIRS.

In every large public building or institution in which the stairs is subjected to heavy traffic, some protection to the nosing of the tread is absolutely essential, otherwise the treads speedily become worn out, and have to be renewed. Some architects, in order to avoid this heavy charge on the maintenance of the treads, have their treads, in the case of heavy timber stairs, framed in several pieces, so that the nosing may be more easily renewed; but this is, at best, a makeshift. On the other hand, the coarse metal castings so commonly used to protect the tread are often a source of grave danger. Imagine a rush of boys down a school staircase—what a liability to accident there is through the existence of the ordinary casting. We ourselves have personally witnessed more than one serious fall, which might have had most serious effects, caused by the toe catching in the projecting protector. To meet this difficulty there has been devised a well thought-out pattern of tread, known as "Mason's Patent Non-slipping Tread," which is a device to prevent slipping, and which increases the durability of the stairs. The numerous customers of the makers, without exception, sound its praises, and many eminent architects, who have examined and tested it, specify it in their work.

Mason's tread consists of a plate of steel, brass, or hardened metal, a quarter of an inch thick, with dove-tailed grooves, into which are inserted strips of lead, giving a



firm foot-hold. The material is easily applied to wood, stone, slate, marble, granite, concrete, or iron, and may be placed upon the surface or let into the stair. The steel plate makes it practically indestructible, and the method of combining the two metals is such that the material may be applied to the extreme edge, giving protection where it is most needed. In this respect it is without a rival, as wood or rubber soon wears out, while any hard wood or plain metal acquires a polish by use, inviting accident (this applies also to concrete and hard stone).

Mason's Patent Tread is noiseless, equally efficient whether dry or wet, not affected by frost, and is neat in appearance. In London, Manchester, Glasgow, and other large towns of the United Kingdom, it is upon the stairs of most of the Government and other large buildings, railway stations, etc., besides those of many private firms. It is also on all the underground latrines of the Corporation of the City of London and most of the Borough Councils; on all the steps of the Tower Bridge, Blackwall Tunnel; every station of the new Central London Railway, schools of the London School Board, etc., etc. In America, on the ships of the U. S. Navy: also on the stairs of many of the large dry goods stores, many of the principal hotels, City Halls, public markets, schools, police departments, etc. It is also applied to the iron stairs leading to the great subway in Boston. In New York the severest test possible is given by its use upon the stairways of the Brooklyn Bridge, where it is still efficient, after the steady wear of millions of feet for nearly two years.

—:o:—

Meaning of Term "Squinch."—Squinch is an old name for a corner cupboard. In Gothic architecture the term is applied to the arches thrown across the angles of a square building to bring it to an octagon, as when a square tower has to be prepared to carry an octagonal spire. The spaces under the arches have a fanciful resemblance to corner cupboards whence probably the term,

ENGLISH v. FOREIGN CEMENTS.

The inferiority of English cement in the past, says a recent correspondent of the *Morning Post*, has been due quite as much to the civil engineers of this country as to the manufacturers. It was the part of these engineers to investigate the various qualities of the materials they employed, and to lay down clearly the tests applicable to them. It was imperative with Portland cement to investigate its various properties, and to arrive at a consensus respecting the tests applicable to it, but although some attempts have been made in this direction, they have proved failures. There is no consensus, no standard of quality to regulate the trade. The case is totally different in Germany, where a uniform standard exists, a standard based on scientific and experimental data, and entirely free from the antiquated prejudices that prevail with us. Cement makers there know what they have to do, and the engineers do not expect impossibilities from them, or the fulfilment of incompatible conditions. For example, the ancient practice, and the practice still prevalent in England, is to test the strength of cement by the breaking strain applied to neat cement—that is, cement without sand. Such tests give the most uncertain, and often fallacious, results. Cement is never used neat, and common-sense ought to have instructed our engineers to base their tests on the mixed article. The Germans employ only sand tests, consisting of a mixture of one part of cement to three parts of sand. Again, an old English test is that of weight per bushel. This was designed in the pre-scientific age to exclude light-burnt cement, but it has been found that very fine grinding is an essential quality in good cement. It also increases the bulk, and although the test of weight per bushel is in direct antagonism with it, this test appears in nearly all specifications in this country. It is superseded in Germany by the test of specific gravity, which is quite independent of the fineness of grinding. Then there is no proper rule in England for the proportions of materials in cement revealed by chemical analysis, nor even in the analytical methods employed. A most valuable test which has been adopted during recent years on the Continent and in the United States is the boiling test. This is gradually receiving the notice of our engineers. But one engineer prescribes a tensile strain, and another analytical tests which are quite incompatible with the boiling test, and which compel the manufacturer, much to his loss and inconvenience, to make various qualities of cement, whereas, on a rational system of tests, he would make only one. This anarchy pervades the whole trade, and is evinced in Government specifications as well as in private undertakings. Let our engineers pocket their insular pride, and apply the knowledge of the Teuton, and then we may hope to see the prestige of English cement restored, and the markets turned in our favour. We are glad, however, to know that we need not go beyond the limits of Ireland for cement, as we have several very excellent manufactories in Dublin and one in Wexford.

—:o:—

Safe Loads for Foundations.—Some writers try to calculate from the natural slope, or "angle of repose" of different kinds of ground, how much pressure per square foot each kind will safely bear. Assuming the safe load in this case to be one-third of the ultimate strength, they arrive at the result that hard, dry clay will safely bear about 3 tons to the square foot, and soft, wet clay scarcely half a ton. Gravel, by the same rule, is inferior in strength to hard, dry clay, and can only be trusted to about 2 tons; while compact earth, in theory, is superior to it, and would carry safely 4 tons or more to the foot. These results are hardly in conformity with experience. The trustiness of a foundation depends on many things beside the "angle of repose" of its constituents. Practice shows that firm, compact clay, not dry, but kept evenly moist and unaffected by atmospheric changes, will safely bear, for many years, at least 2 tons to the square foot. Compact gravel, according to the general belief, will support more; but earth, whether "firm" or not, would not usually be trusted with more than a ton, or, at the utmost, a ton and a-half on the same area.

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No. 997

The County Council and the Royal Institute of Architects' Resolution.

"THE COUNTY SURVEYORS' DUTIES."

"A resolution was received from the Irish Institute of Architects stating that their attention had been directed to instances in which County Surveyors, under the new establishment of County Councils, were engaging in private practice, both in architectural and engineering work, and that in their opinion it was desirable, in the interests of the public service, that County Councils should make arrangements under the Local Government Act with the County Surveyors as would enable them to devote the whole of their time to their official work.

"Dr. O'Ryan did not see why this resolution should be read at all. They were well able to do their own business (hear, hear).

"Marked 'read.'"

These are the terms in which the Clonmel *Nationalist* records the treatment accorded by the Tipperary County Council to a communication of the Royal Institute of Architects, transmitting a copy of the resolution recently passed. It is an unpleasant thing for architects to see their representative body thus flouted and seemingly sneered at by a local council, but we fear it will be many a long day before they can hope to receive much better treatment. The years of inaction of the Institute, and the spasmodic fashion in which it interests itself in matters pertaining to the status and dignity of the profession have, of course, much to answer for, but the real cause is the lethargy and indifference with which the vast bulk of the profession regards questions most closely affecting it, the entire lack of cohesion or combination for any useful purpose. The individuals complain of hardships and injustices of one kind or another, but they either refuse or neglect to take the most necessary steps to mend matters—the very first of which steps must be active combination; but we fear greatly that no useful mutual co-operation will be seen until we have some form or other of Statutory Registration.

The ignorant and contemptuous fashion in which one of the members of the County Council—one Dr. O'Ryan (himself apparently a professional man)—couched his remarks, and the appreciative "Hear, hears" which greeted his observations when replying to the official communication from the representative body of an old and honourable profession, but too painfully show the truth of what we say. We cannot doubt that, had the communication in question emanated from the Royal College of Surgeons, the Incorporated Law Society, or even the Royal Veterinary College—not to speak of a congregation of ecclesiastics—it would have

been accorded very different treatment. Anyhow, it was, at any rate, good to have the resolution at least read, for cracks like Dr. O'Ryan we shall always have with us. We may venture to put a home question to men like Dr. O'Ryan. Dr. O'Ryan is, we believe, a medical man in practice in the town of Tipperary, and is, we understand, a member of the Asylum Joint Committee. Suppose the well-paid Resident Medical Superintendent of that Asylum extended his peregrinations to the town of Tipperary, and visited Dr. O'Ryan's patients, canvassed the local Dispensary Committee for Dr. O'Ryan's post; or suppose the offender were the compounder or apothecary to that Asylum, which is a better simile for the County Surveyors, who are not entitled to be described as architects—how would Dr. O'Ryan like it? We fancy he would be the first to observe that that cheeky official had quite enough to do, and would be better employed attending to the duties of his well-salaried office; or possibly his annoyance might find relief in a petition on a sheet of foolscap to the General Medical Council, whose intervention would, in all probability, not take the form of a courteously-worded resolution. To speak charitably, we can only suppose Dr. O'Ryan did not perfectly understand the grievance, and looked on the communication in the light of a dictation to the Council. We hope such trifles will not trouble duly qualified Architects, for the wheel has been set in motion, and must now be kept revolving, no matter how much jolting it may have to encounter in its course.

The Appointment of an Architect at Clonmel.

A very curious incident comes under our notice. Some time since the Joint Committee of Management of the District Asylum at Clonmel decided on carrying out certain additions to that Institution, and made it known that they would shortly proceed to the appointment of an architect. A number of gentlemen made application for the post, amongst them Mr. J. F. Fuller, of Dublin. The Committee apparently were not disposed to appoint Mr. Fuller, a long correspondence ensued, and some pretty active canvassing in various interests took place. Mr. Fuller in some of his letters intimated that he had a claim against the Committee for £500 for sketch plans made for the old Board of Governors (abolished by the Local Government Act, 1897), and added, that if appointed to superintend the contemplated works he would waive his claim, but in the other event would institute proceedings for its recovery. This was the first notification the Committee had, for the account, it would seem, had never been furnished either to them or to their predecessors, the old Board of Governors. They repudiated liability, and submitted the claim to the MacDermot, K.C., who advised that the Committee were liable for the debts of the old Board of Governors, notwithstanding delay in furnishing. Now comes the curious part of the story. The matter again came up at a recent meeting, when a letter was read from Mr. Fuller, again agreeing to forego his claim for fees on previous building schemes if appointed architect for the present scheme, but, in addition, there was received a letter from Mr. Hackett, the County Surveyor, stating that he was jointly interested with Mr. Fuller, and that he also would forego his claims if Mr. Fuller were appointed. In the result, the Committee as a matter of economics appointed Mr. Fuller.

Now, the entire estimated outlay on the building project amounts to £13,000; the architect's fees on this, calculated at four per cent.—for most of the architects who have worked under the Board of Control, agreed to accept that percentage—will amount to £520, to secure which sum the architect offers to forego a claim of £500, leaving for division between the two gentlemen named the not very extravagant sum of £20 as remuneration for designing and superintending a building of sufficient importance to cost £13,000. It is, indeed, difficult to understand how such procedure can be reconciled with the Institute schedule of charges, or with a sense of the etiquette which is supposed to prevail amongst members of a profession. It would also be interesting to have the views of the Council of the Institute of Architects in regard to members of the Institute who enter into alliances with the County Surveyors for the purpose of strengthening their local influence.

NEW BOOKS.

THE ENGINEER OR ARCHITECT AS ARBITRATOR BETWEEN THE EMPLOYER AND THE CONTRACTOR, AND HIS OTHER FUNCTIONS UNDER BUILDING CONTRACTS. By Charles Currie Gregory, Member of the Canadian Society of Civil Engineers. Associate Member Inst. Civil Engineers, London; Barrister-at-Law. London: William Clowes and Sons, Limited, 7 Fleet-street. 1901. Price 12s 6d.

The object of this work is to set before the engineer or architect the law governing his functions under a building contract. Mr. Gregory possesses the incalculable advantage to one attempting such a task of being himself a qualified engineer, who has previously met with and had to overcome the difficulties of a legal nature which arise in everyday practice; he is also a member of the Bar, and as such has made a study of the law. We say advisedly that this is an incalculable advantage, for the average architect or engineer, as a rule, has so slight an acquaintance with the principles of common law, or with the statute law, that he would hardly be qualified to write a book on the subject, except in collaboration with a lawyer—while, on

contract be extended. The seizing of a contractor's plant by an employer who takes from him his contract, is very fully dealt with, and shows the question to be one full of difficulties. Space does not permit of our adequately dealing with the many excellent and practical examples of every-day difficulties that are described and the law governing them. In the work itself they are most admirably put, and the law lucidly explained. Mr. Gregory's book is one which ought to be in the hands of every engineer and architect; it may save him many a blunder, and his client from a costly law suit. An exceedingly strong feature of the work is, that every principle of the law laid down is strengthened by cited cases, of which there is a very numerous selection.

THE SECOND VOLUME OF THE "HISTORY OF WEXFORD." THE HISTORY OF TINTERN ABBEY ROSEGARLAND, AND CLONMINES. Edited by Philip Herbert Hore, of Pole-Hore in the County of Wexford. London: Elliot Stock, 52 Paternoster Row, E.C. 1901.

Some time since we had the pleasure of reviewing the first of these volumes of the "History of Wexford," and of adding a word of praise to Captain Hore for the patient and scholarly



Tintern Abbey, Wexford, showing entrance to Abbey Grounds and Lady Chapel

the other hand, every engineer knows how unappreciative of the difficulties arising under a building contract is the ordinary lawyer.

The work in question gives a really sound practical insight into the law. Without being too technical, or ponderously legal, it details how the many points which arise can be met, and points out how sundry pitfalls may be avoided. For instance: most building contracts contain a clause providing for the cancelling of the contract if the work is not carried on with due despatch, so as to give reasonable hope of its being completed within the time of the contract—yet, not every engineer knows that this is a right which, to be availed of, *must be exercised within the term of that contract*; for once the date stipulated has passed, the employer is assumed to have condoned the delay. Again, builders often plead for an extension of the term agreed on; from their point of view a very foolish proceeding, for the least delay on the part of the employer in giving the contractor possession of the land, or the ordering of any extras, automatically releases the builder from the obligation to finish by a given date. Hence the builder, who has received no extension of time, is in a much better position than he who has. On the other hand, the employer should be careful that, proportionally to every delay of which he is the cause, the term of the

research he has shown in giving to the public these records of the historic "model county"

The work is beautifully produced, clear type, admirable illustrations, and is handsomely and richly bound in a manner beyond the usual run of books sold at 20s., which is its price. Not that we mean to suggest the book should be taken by its cover, for if the exterior is good, the contents are better, it is full of information, based upon unimpeachable historic documentary evidence. The second volume, too, is of greater interest than the first. The style is more discursive and the illustrations superior and more numerous.

Tintern Abbey, or De Voto, as it was called in the ancient records, from having been founded in the due fulfilment of a vow by William Marshall, the elder Earl of Pembroke, when in great peril at sea (A.D. 1200), is beautifully situated at the head of the Lough of Bannow in the south of the County of Wexford. It was a Monastery for Cistercians affiliated to Tintern in Monmouthshire, from whence, it is stated, the first monks were brought; and, being situated in a neighbourhood exposed in early times to the invasions and attacks of the Kavanaghs and other inimical Irish tribes, underwent many vicissitudes. Even after the dissolution of the monasteries this Abbey was granted to the ancestor of the present owners on conditions of fortifying

it, repelling attacks, and subduing the King's enemies. By the kind permission of the Dean of Canterbury the author has been able to secure and reproduce many beautiful photographs of Records in the Chapter-House Library there relating to transactions between the Abbots of Tintern and the Prior and Convent of Christ Church, Canterbury. The documents so photographed and the early Charters are all translated and annotated, and with the State Paper Letters connected with the first grantees and the state of the county generally, form an interesting collection from all reliable sources, now for the first time published.

Rosegarland and Cloninnes, in the vicinity of Tintern, are dealt with in a similar manner, and their history traced through a series of annals down to the Rebellion of 1798. The former, once a baronial court, and after the conquest of Ireland a fief of the great house of De Loundree—having passed through more vicissitudes of proprietorship than any other property in the county—is traced through its past owners to the present family.

The latter (of which the ancient seal is shown), still famous for the ruins of its castles and for the discovery of silver ore there, in very early days the site of an Augustinian Monastery, and subsequently a Dominican Friary, is historically treated in a similar manner from the same reliable materials—the Public Records and State Papers; every document of importance connected with the past history of these places which could be found in the Public Record Offices of London and Dublin have been laid under contribution for this object. These materials of history, the trustworthiness of which is undoubted, are exhibited in a series of chronicles, effect traced to its cause wherever possible, and accompanied by references and editorial notes for the discovery and elucidation of any doubtful or obscure photographs.

The work is illustrated by numerous photographic views, facsimiles of documents, copies of ancient seals, plans, and other illustrations of the text, and should prove a veritable treasure house to every student of Irish History, as well as being of great interest to the general run of the educated reading public.

NOTES ON ROAD CONSTRUCTION.

(Concluded.)

In the author's experience many very first-rate country roads have been run across swamps where the bog has been so soft and so deep that it has been impossible to cut down to the clay beneath, and in many such cases bundles of saplings have been freely laid down at right angles to the line of the road; large flat stones have been superimposed, and then the road has been made like an ordinary macadamised road on the top of this apparently insecure substratum. In driving rapidly over such roads the traveller experiences a slight undulatory movement due to the absence of solid foundation and the elasticity of the road itself.

Measurement of Materials

Whilst on this subject, it may be well to emphasise the importance of measuring your soleing and metal in the stack alongside the road before allowing it to be spread. Without wishing to cast the slightest slur on sub-contractors, who are often conscientious and incorruptible, the unpleasant fact remains that the man who has agreed to supply you with 600 cubic feet of soleing, and 500 cubic feet of metal, per 100 feet of roadway, is often tempted to save his money by giving you a short measure for two or three chains of the portion he has contracted for. Always, therefore, measure up your soleing and metal before spreading—when it is once on the road you cannot properly measure it by any artifice known to science.

Sub-Contractors.

Many sub-contractors may prefer to break the metal before bringing it on site; others carry the rough stone from the quarries, and break it and stack it on the roadside. Always leave these matters to the men themselves. They have agreed to supply so much soleing of such and such a quality, broken to a specified size, at so much a hundred cubic feet, or so much metal on similar terms. Let them make their

own arrangements; all you want to know is that the material is according to specification, and that you have the quantity agreed to.

Size of Metalling.

A good size for metal is fragments, the longest diameter of which will pass through a ring $2\frac{1}{2}$ inches in diameter. Some say 2 inches, others 3, but $2\frac{1}{2}$ inches is a very fair average size for metal.

In arranging with the sub-contractors, it is better to put into the agreements as to metal, "including spreading and rolling," so that they agree to quarry, carry, break (according to specification) so much soleing, and so much metal at so much per cent. cubic feet, that they stack the same for measurement by the engineer, and afterwards spread the same and contribute to the cost of rolling by steam roller. There is then no difficulty, and no question can arise as to what allowance should be made for the cost of spreading and rolling.

When the soleing and metal has been spread, the centre of the road being always kept 6 inches or so higher than the sides, the rollers should begin rolling the sides, and afterwards the centre. The surface should be carefully and steadily watered during the rolling process until the earth or clay from beneath the soleing rises up and flushes the surface. It is a great mistake, but one which is often made to save time and secure a "surface" rapidly, to place earth or clay on the metal whilst the rolling progresses.

Watering and Rolling.

When the watering and rolling are continued until the muddy clay is actually pressed up by the weight of the rollers, you may be sure that the soleing and metal alike are completely bedded in clay like concrete, and this is what is required. When the heavy part of the rolling is finished, a light sprinkling of fine river sand is much to be commended, as it adds an excellent finish to the road surface.

Mountainous Country.

When your road runs through a country much subject to high floods, and more especially where heavy banking has been much resorted to, there may be a chance of serious damage to the surrounding country unless some means are provided for allowing a very large volume of water to escape rapidly.

For this purpose, and in addition to the ordinary culverts, openings, or syphons, which have been constructed, it may be advisable to lay down what is called an "Irish bridge," *ferrash* (Ind.) or pavement. This is done by depressing the road level with a gradual slope, say 1 in 10, from the formation level nearly to the ground level, and paving the entire space and sides of slopes with brick on edge or stone (laid on edge). Of course, the extent of such pavement must vary with circumstances, and the site should be selected only after taking a series of careful levels and ascertaining the point at which the waters of a flood are likely to accumulate in greatest volume; this will probably be at a point where your embankment is the heaviest.

Then, again, these pavements may be most advantageously used in mountain paths and roads where small streamlets, etc., cross at uncertain intervals and cut up the road surface. Indeed it may be safely stated that this method of dealing with all small streams is preferable to drains and culverts beneath the road surface, as those latter are perpetually getting choked by sticks, stones, mud, and other *debris* washed down the mountain sides.

In the construction of these pavements care must be taken that the surface is built slightly concave, and that it slopes gradually towards the edge of the road. Also let all the stones be laid on edge, and take care that the stones near edge of road are heavy and well laid, so as to resist the stones, heavy trees, etc., which roll down the mountain sides. It is better, in the author's opinion, to have no pucca masonry in work of this kind on a mountain road. Good dry masonry is the best for several reasons. It is difficult to "scamp" dry masonry, as a glance will suffice to see if the headers go well back into the work, and if the stretchers are well laid. What is termed "unskilled" labour will carry out such work, and repairs are easily executed when damages have occurred.

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Fans.

It often happens that very considerable difficulties are presented to the engineer by a stream debouching from a narrow gorge or canon, and spreading out into a fan-like sheet or series of small streams. Instances of such obstacles are to be found in most countries where the mountains are steep, and melting snows cause heavy floods at certain times of the year.

Bridges Swept Away.

The author has often seen strong masonry bridges built with the most careful attention to good principles completely swept away—"scooped out" is more expressive—by a flood, which, instead of taking the arches, took the abutments in the rear and completely removed them, not a single vestige of any of the stones remaining to tell the tale that a bridge once stood there. Anyone who has been the eye-witness of a brown flood in the Himalayas, when the thick, roaring torrent carries down hundreds of huge forest trees per hour, and boulders weighing many tons are sent crashing and thundering down stream, as though they were marbles, will feel that it is rather a hopeless task opposing even the most solid masonry to such terrible forces. What happens as often as not is this:—A number of forest trees collect between the abutments or piers. These prevent the passage of others till there is a mass of forest timber accumulated on the upper side of the bridge. The waters then become piled up, as it were, the bridge is gradually submerged, and, unable longer to support the weight, gives way with a rush, and the pent-up waters, dashing along with increased force, probably clean out every scrap of masonry down below the very foundations. The author's respect for large mountain rivers in high flood has been very great ever since the destruction of the Kohala and Domel bridges in the flood of 1893.

Bridges.

From the above remarks it will be gathered that the less piers and projecting abutments are resorted to the better, in all cases where very heavy and rapid floods may be expected. Where the span is considerable—say, over 200 feet—it will generally be better to throw a suspension bridge across the stream.

Span.

For spans of 100 feet or less wooden bridges of the cantilever type are to be recommended in all places where timber is easily obtained, and, therefore, cheap. In such cases, and if the abutment sites are undeniably good and solid, and there is plenty of good large building stone about, dry stone abutments may be safely used, and have this advantage over mortar masonry—that the embedded ends of the timbers are less likely to rot. Such bridges as these are much used in Kashmir, and they are extremely easy of construction, do not require what is called "skilled" labour, and, if washed away, are replaced at a comparatively trifling cost. If large stones are not plentiful, it will be better to construct the abutments of timbers notched together horizontally at their crossings—after the fashion of a timber-crib—and then steadied by gravel or ballast filling.

Slips.

It would be easy to devote much time to the discussion of the various methods of dealing with slips, and there is, perhaps, no question which ought to be so carefully studied, as the selection of an alignment comparatively free from slips will insure a great annual saving in maintenance.

Roughly speaking, slips may be classed under two headings—wet and dry. The former often take place where the cutting has been through loose conglomerate, and the latter whether the angle of the mountain is very severe and composed of slaty shale or collections of rolling boulders, and it is hardly necessary to say that in the northern hemisphere the wet slips are oftenest found on those sides of a valley which face north, and the dry on the slopes having a southern aspect, exposed to the rays of the sun for a longer time each day.

Having decided, more or less roughly, the most suitable alignment, it will be well, before definitely fixing on it, to examine most carefully all doubtful places, and to go to some expense in borings, etc., and to make all the inquiries

possible from the inhabitants. You have also to remember that though a place may rest securely enough at a very steep incline, *if let alone*, the fact of cutting a roadway through it alters the conditions, and, as it were, invites and encourages a slip. It may often be well worth while, even in a case where an otherwise excellent alignment has been suggested, to contour or zigzag several hundred feet higher up to a level well out of reach of the lower level, in which there may be two or three ugly places to tackle.

How to Avoid Slips.

One rather good plan is to cut boldly a deep vertical drain, right through the slip from top to bottom, which you will cross by a bridge. Into this drain a number of smaller ones will be run at angles, as shown, and there is a chance of by this means keeping the body of the slip dry. As long as you can succeed in doing this, the slip will probably not move.

By Drains.

Care must be taken to keep all the drains well cleaned up or the work will have been in vain. Melting snow is about the worst enemy confronting the engineer in his dealings with wet slips, for it soaks into the ground quicker than it runs off by the drains, and thus saturates the earth before the drains can fulfil their functions.

By Groins.

Then there is the method of groins, running much in the direction of the smaller side drains in the sketch; to make these successful many piles will have to be driven in, and the spaces between interlaced with saplings and bushes, etc.

By Planting.

A third plan is to plant the slips with trees or shrubs having long tap-roots, and a combination of this with the first-named system of drainage may possibly be the most paying method to adopt.

By Retaining Walls.

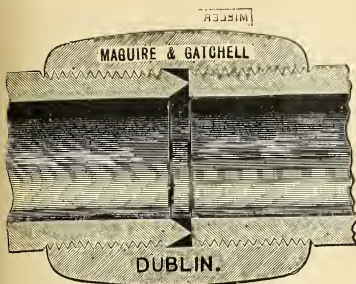
Then, again, there are some engineers who recommend the judicious introduction of concrete walls both in wet and in dry slips, but it is to be doubted whether this plan can be universally recommended. In all engineering work common-sense, combined with experience and a sort of intuitive perception of the requirements of the case, must be the guide. No two cases are quite alike, and it must be left to the perspicacity of the engineer to decide on what to do in doubtful cases. Doctors disagree, and so do engineers, often upon points which to an outsider appear to be quite clear.

The object of these remarks has mainly been to emphasise the extreme importance of avoiding doubtful ground, even if in so doing an augmentation of initial cost is incurred.

A good retaining wall may effectually deal with a small local slip, but, needless to say, it is quite useless if its foundations rest on the slip being dealt with. Many of the most satisfactory walls—both face and retaining—are made of the best dry masonry; for this class of work, when the stones procurable are of large size, and are well bonded, allows the filtration of water which is apt to accumulate when first-class mortar masonry is used. Dry walls, with a good batter, steeped at the back, and with a secure foundation of width of from one-half to one-third the vertical height of the wall, may stand for ever, and the writer knows of many such which have lasted for eighty years and more.

In a country where stone is plentiful, it is generally well to make your retaining walls of dry masonry, and to be careful to have the bedding courses running at right angles to the face of the wall, and not horizontally, as so many are improperly built.

The roads upon which the author has been employed having differed so widely in character, considerable scope has been afforded him for the acquisition of experience both in construction and maintenance work. It has also been his privilege to carry out these works for the most part in a fine climate, and surrounded by the grandest and wildest scenery in the world; and he hopes on a future occasion to be permitted to read a paper to this Institution which will be illustrated by a large number of photographs, and will contain fuller details than it has been possible to introduce into this brief sketch.



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A REMARKABLE PRONOUNCEMENT ON ARTS AND CRAFTS IN IRELAND BY AN IRISH PRIEST.

At the recent meeting of the Maynooth College Union, the following notable address was given by the Rev. J. O'Donovan, Loughrea:—"The assertion that a revival of industries is necessary for the prosperity of Ireland, and even for its national existence, has in recent years become somewhat of a commonplace. We have all come to realise that the agricultural industry alone, although it is and will be for many years the staple industry of Ireland, cannot, however, satisfy all our economic needs. When we shall have gained a stable tenure of land and an equitable distribution of it, there will still remain the problem of the disposal of a surplus population.

Emigration.

The choice will lie between emigration—with its wreck of national life and national wealth—or an industrial revival on a large scale. Nor is this question affecting the future only. Who among us, who has a heart to feel, has not been stirred to the depths by the thought of that quarter of a million of the strength and intellect of Ireland that within ten years have left Ireland, sorrowing, because there was no work at home for their hands to do? Consumers are largely to blame. We are a poor lot here in Ireland in many respects, if we only have the grace to admit it. We abuse England and things English roundly with our tongues, but we have a hankering for English goods, and English taste, and the stamp of English approval. When we speak of encouraging Irish manufacture, we mean, therefore, more than the mere immediate use of Irish things; we mean, by the strength of our demand, to force idle Irish capital to become a national wealth producer.

The Priest as Art Patron.

Now, where does the priest come in? Pretty well everywhere. He is still the valued friend and adviser of the people. He ought to lose no opportunity of impressing on the people the economic aspect of the emigration question. He ought to bring his own influence and the influence of his parishioners to bear on capitalists to invest their money in Irish enterprises. He ought—but here I speak with the diffidence of absolute ignorance—if he is a capitalist in a small way himself—to give an example to his followers. And now I come to what is the main object of this paper, and to which what I have hitherto said may serve as an introduction. One of the largest consumers of goods in Ireland is the Catholic Church. Hundreds of thousands of pounds are spent annually on churches and church decoration. Within the memory of most of you millions have been spent for the purposes of the Church. To those interested in Ireland the question has naturally often arisen—has all this money been spent as far as possible in Ireland, and if not, is there any possibility of securing that all church work should be done in Ireland in future? Before answering these questions I shall have to offer some explanation of my method of treating them.

Irish Manufacture.

The advocacy of Irish manufacture in church work differs from other branches of the subject in this—that it deals necessarily with questions of art, and where art is concerned we must deal with the question from the art point of view as well as from the commercial and industrial.

Church Decoration.

What I mean is this—if we find that decoration of Irish churches is, as a rule, not done in Ireland, before we advocate a change, the burthen will be laid on us of showing that the work can be done not only industrially as well in Ireland as abroad, but also that it can be done as well, or better artistically.

Church Building.

Taking the shell of the churches, they are generally built of Irish stone, roofed with Welsh slate, without, in very many instances, any effort whatever being

made to secure Irish slate. I am not concerned in this paper, which must have a limit somewhere, with the style of our churches, though, in passing, I may remark that it is generally execrable. Architecture in Ireland seems to have fallen from the place it held in mediæval times as the mistress of all the arts.

Bad Detail, Bad Art.

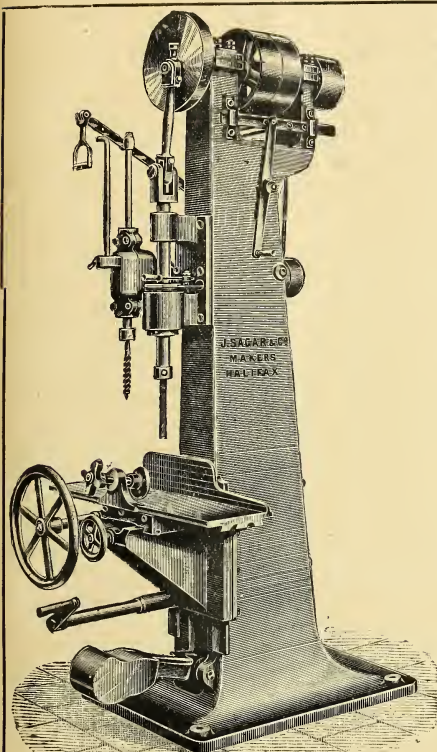
All over the country Gothic churches, false in detail, and bad from every artistic point of view, have sprung up during the last fifty years. They are a monument to the zeal and piety of the people, but they are also a monument to the want of taste of modern architects. Beyond the mere walls of our churches and the unskilled labour employed throughout, it must be admitted that 80 or 90 per cent. of the remainder of church work—woodwork, carving in stone and wood, stained glass, painting, etc.—is all foreign work. When we consider that the churches of Ireland are built to the glory of God by the hard-earned money of the poor there must be very strong reasons, indeed, to justify anyone engaged in church-building in spending the money of an impoverished people for the enrichment of foreign nations to the detriment of art and trade in Ireland. Tradesmen have complained, not once but often, that church money has been spent in England and elsewhere, that if spent in Ireland would have kept alive trades now languishing from dearth of work. Now, there is to my mind no reason why any church work falling under the head of the ordinary trades should not be done at home. We have Irish carpenters and Irish smiths just as good as in any other country.

Foreign Decorative Art

The great field of argument, however, centres around church art work. It is in this field that the foreigner reigns supreme in Ireland. It is at decorative work that many strong supporters of Irish manufactures draw the line, and say, "Here we must stop." Ireland can produce no art; we must, at least for generations to come, stick to the foreigner. We must go on getting our statues from Florence and Geneva and Munich, our stained glass from Munich, from London, and Birmingham; our woodwork from Belgium, our paintings anywhere except in Ireland. "You know those foreigners are all artists," say the admirers of foreign art in this country; "the Dublin men can't touch them." Now, I have no hesitation in saying this is all ignorant twaddle.

Bad Sculpture, Bad Painting, Worse Glass.

We want a little plain speaking here in Ireland. Every year this unfortunate country, which everything seems to conspire against, is being flooded with bad sculpture and bad paintings, and worse stained glass, all, forsooth, because it is foreign, and therefore must be good! Of course, there are many in this audience who will deny this. Many will say—"This is very true of much of the church decoration in Ireland, but it is not true of my church. My windows are very beautiful and have been much admired." In order to meet these objectors it is, therefore, better to examine somewhat in detail the different classes of church decoration. Stained glass is one of the most familiar forms of decoration in our churches. There is scarcely a church in Ireland that has not one or more stained glass windows. In some of the large churches the cost of those windows runs up to £3,000 or £4,000. It may seem a rather sweeping statement to make, but it is a statement upheld by every expert authority on art, that generally, indeed in almost all cases, this glass is, from an art standpoint, beneath contempt. It is as a rule gaudy in colour, badly drawn, vulgar in design, and where perspective is attempted, false in perspective. It is, moreover, bad glass. There are many varieties of glass known by the very indefinite name of stained glass. There is pot-metal which alone was used in the best period of stained glass. In this glass the colour runs through and through the texture of the glass, the colour and the glass being fused together in the pot. Then there is enamelled glass, in which the colour is enamelled on the glass in soft pigment. When stained glass manufacturers advertise they always profess to supply a window, as the advertisement puts it, "best pot-metal antique." When the window is put up



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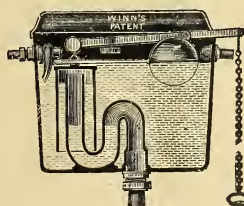
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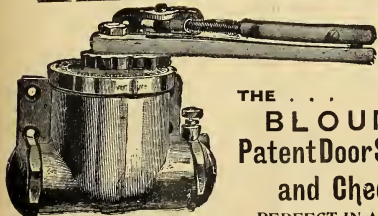


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it is not infrequently very poor enamelled stuff. A trained eye sees the difference at a glance; an untrained eye sees the difference after the glass has been put up twenty or thirty years, or very much less in many cases. The real pot metal is only mellowed by time; its colours grow richer and more jewel-like. But years deal hardly with enamelled glass, especially with the modern stuff. The enamelling begins to wear off; faces become patchy, clothes tattered; it becomes pitted all over in the blacks and browns; finally, the unfortunate owners would be glad if some thief came in the night and removed the eyesore. Even in churches where a fairly good quality of glass is used, the result is equally disastrous.

Craze for Pictured Windows.

There is a craze for pictured windows, large and elaborate subjects that tell stories. This is a complete misunderstanding of the limitations of stained glass. In the thirteenth century, when the finest glass was produced, there were no elaborate pictures; the effects were produced by careful leading and a most delicate choice of differently coloured glass. If figures were necessary they were outlined in leads, the feature and other details being worked in with the smallest possible use of brown pigment. The artist craftsmen of these times knew exactly what could be done in glass and what could not. They knew that the first quality of a window is to give light, and next, if it is to be coloured, its function is to give coloured light of the finest kind. For that reason the 13th century artists always aimed at colour and translucency. Now the modern windows sin in almost every instance against this primary law. The function of the modern window seems to be to shut out light, or where it is let in to pass it through thick dirty brown or other paint with which the glass is thickly plastered. To understand fully what I want to convey it is necessary to have seen some good glass of the best period and compare it with the modern. The best examples are to be seen at Chartres Cathedral, outside Paris. There are also a few fine examples which somehow escaped the vandalism of Puritanism in some of the English Cathedrals—in Yorkminster, in the east window, in Salisbury, Lincoln, Westminster, and others. These windows, when the sunlight passes through them, are like mosaics of different coloured jewels, they never look gaudy because of the extreme purity of their tones.

Church Robbed of Light.

Sunlight through a modern window is robbed of all its beauty, and strikes the eye as a dirty drab. Apart from quality and colour, the modern stained glass window is bad and vulgar in design. I shall not speak now of incorrect drawing, which is to be found in many of the stained glass windows in Ireland. The human figures are certainly not of any race that inhabits this earth in any known period of history. But even given correct drawing, the effects of light and shade are always wrong; they are impossible with light always falling on the picture from behind. Attempts are made at presenting religious pictures to incite our devotion.

Conventional Dummies:

The effect is usually a number of conventional dummies, with embroidered clothes, and an expression drawn from milliners' showcards. This may sound irreverent. It sounds so to me; but desperate diseases require desperate remedies. I feel intensely, having the highest ideals of our religion, the saints that we revere, the Man-God that we love and worship, vulgarised by the ignorance and incompetency of the modern stained glass maker. Another important branch of church decoration is sculpture. There used to be a fine art known as Sculpture. To judge by the Irish churches it is a lost art. Here again the foreigner holds the field. Go into our churches and you will find that the more pretentious of the statues come from Italy and Munich. If you venture to say you don't like the work the good priest looks you all over with a smile of superior pity, and reduces you to your proper level by the clinching remark, "Why, this statue was made at Carrara." Of course there are marble quarries at Carrara and stone-cutters of

very great technical skill, but Art, with an idea behind it, especially on religious Art, no. Take a statue of St. Joseph, admitting that it is modelled correctly, which it very often is not, does it convey any religious idea to the mind? Only for the label it might just as well have stood for Marcus Aurelius, or any other character that you like to think of. Church painting is at just as low an ebb. All our Church painting, with such few exceptions as are hardly worth noticing, comes from abroad. Rome, Germany, Belgium, France, are the principal markets. We may dismiss this branch of church art in a few words.

The Paintings!

The paintings are either attempts at religious Art not above the level of daubs, or fairly good pictures—not religion. What I mean by the latter is this: for some time past the country has been flooded by good and bad copies, generally made in Germany, of paintings entitled Madonnas, Magdalens, etc. The originals were painted by men who had no religious belief and are frankly naturalistic in treatment. Yet these pictures, often the grossest portrayal of human passion, are hung up in Convents and other religious buildings, even in churches, to inspire the reverence and devotion of the faithful. There are other branches of church decoration—brass, gold, and silver work, and woodwork, that I shall only allude to. They are generally made in Birmingham or in Belgium. Now, how do we stand? We have first an immense consumption of decorative work that shows no sign of decreasing. We have most of this produced abroad, and done almost as badly—considered artistically—as one could possibly conceive. This work, if it could be done in Ireland, would be an immense industrial gain, and would provide work for thousands of hands. But it has behind it far higher possibilities. It may make Ireland a great centre of Art production.

Lost Art!

Ireland once was, as you all know, remarkable for its Art products. "The barbarians by the Western Sea," as a Greek writer called our fathers, knew the exquisite art of enamelling on precious metals when it was unknown to the Greeks and Romans. The country that produced the Tara Brooch and the Cross of Cong and the Ardagh Chalice had surely a highly developed Art sense. In architecture our fathers did work of wonderful beauty. The Romanesque ornament at Cong, at Dysart O'Dea; the whole design of that imperishable memorial to Irish genius on the Rock of Cashel—Cormac's Chapel—indicate what Irish art might have come to had it not been arrested by foreign influence. The revival, if there is to be a revival, will rest with the Church.

The Church the Patron.

The Catholic Church has at all times been the centre of Art production. Shall it be so in Ireland? We have hitherto allied ourselves with the Philistines in Art, and have followed the lead of incompetent architects and pushful commercial travellers from Birmingham and Munich, who make periodical calls on the patronage of the reverend clergy. Shall we make a new start? We are little to blame for the past. Our Church was forced to live for centuries without any of the helps of Art.

Impudent Pretenders!

When the penal laws were dropped, before an Art sense had time to develop, the priests of Ireland placed their confidence in men who were supposed to know, but who, as the result has proved, are but ignorant, and, I shall add, impudent pretenders. Personally I am confident that if the priests are willing, they can be in their own special field of work—the Church—the great agents of this industrial and Art revival. The future of it is largely in their hands. I shall go further and say that if they can do it they ought to do it. It is not a matter of choice, it is a matter of obligation. It is not a matter of opinion, it is a religious and national duty. This country is seething over with a new life. There is a revival in thought, in self-respect, in real nationality. People are slowly realising that the Irish people ought to be Irish, that there is such a thing as a distinctive national individuality

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Churches Filled with Rubbish.

Shall we go on as we have done in the past—I say it without fear of contradiction from any competent Art critic in Europe—filling our churches with foreign rubbish, or shall we make an attempt to make our churches the expression of the Irish ideal in Art; shall we try to make our churches worthy of the faith and piety of the Irish people, worthy of our own devotion to sacred and national aspirations, worthy of the religion we love, of which real Art alone should be the handmaiden? Some of my listeners who may not wish to scalp me for any other reason will probably say, "All very fine, but how is it to be done?"

No Art in Ireland.

We have no art in Ireland. I have got thousands of pounds' worth of so-called Irish art in my church, and it is so bad that I would gladly make a present of it to anyone who would cart it off." They may have got thousands of pounds' worth of church decoration done in Ireland in their churches, but they have no Irish Art. With the very few exceptions that I have before referred to, a real artist never entered an Irish church. It is true that Church decoration done in Ireland is perhaps as good or as bad as the foreign work that we are so enamoured of. But I do not recommend such work. After all it is not absolutely necessary to decorate a church. No national decay would justify bad Art. Bad Art is bad Art, whether it is produced in Ireland or in Germany. It is time the country is rid of it. Plain churches with white glass windows are not offensive; badly painted churches, with senseless knobby carving and gaudy picture glass, are. The first step is to put a stop to all orders for bad work, foreign or native. The second is to agree to develop Irish Art if it be at all possible.

A Suggestion.

For this purpose I suggest that a society be formed, to be called, say, "The Irish Art Society," open to priests and laymen at a nominal subscription; that this society be directed by a committee, consisting of bishops, priests, and laymen interested in church decoration, as well as real artists capable of advising on expert questions. This society, representative as it would be of the whole consumptive side of church decoration in Ireland, would be in a position to bring its powerful influence to bear on Irish producers of church work, to compel and enable them to do work of a high artistic level. We have in Ireland artists who will answer to the call. In stained glass manufacture the outlook is hopeful. I do not intend to find much fault with Irish stained glass makers in the past; they did bad work, but, from the point of view of Art, not worse than the firms in England or Munich. They fought against tremendous odds.

"Munich Refuse."

They had to contend with the prevalent belief that Irish work was so inferior to the wretched Munich refuse that it could be done at any price. As the unfortunate Irish maker had to live, he was forced to turn out work mechanically, perhaps inferior to the German glass, but still the best he could produce at the money. Fortunately this movement in favour of better Church Art synchronises with the action of a Public Department that makes me full of hope for the future of stained glass in Ireland. The Department of Agriculture and Technical Instruction, in furtherance of the enlightened policy which has guided its action since its start, has, I am aware, made arrangements to bring to Dublin as a teacher in the School of Art the best available stained-glass artist craftsman to be had. In the course of time it is to be hoped that a school of real artists in glass workmanship will spring up in Ireland.

The Department of Technical Education.

In the meantime the services of Mr. Child, who was the chief helper of Christopher Wall in the revolutionary return to art stained-glass production, will be available in his spare time—which will be considerable—for the stained-glass firms

in Ireland, either to supply designs or superintend their work, or both. If the stained-glass firms are wise they will take advantage of the opportunity, for it will be a means, apart from Art considerations, of establishing a very large industry in Ireland.

Prospects of Sculpture.

In sculpture and painting the prospect is, if anything, brighter. It was one of the curious anomalies of the way in which Church work was hitherto done, that while we have all along had a certain number of painters and sculptors in Ireland, no Church work was ever given them to do. In other words, the only real field of Art consumption in Ireland was shut to the artist. A start has been made in the production of really artistic Church sculpture. I have heard that some good work has just been done in Letterkenny Cathedral, and Dr. Healy, whom the subject forces me to mention, has engaged Mr. John Hughes, a sculptor of whom any country might be proud, to do the modelling and carving for his new cathedral at Loughrea. Mr. Hughes has the highest reputation among artists for the quality of his work. He has now gathered about him a small school animated by his own lofty Art ideals. It is a pity, with men like these to do the work, that statues, dull and expressionless as the marble from which they are made, should still be imported into Ireland. There are also a number of excellent carvers in Ireland, who for bread and butter had to do much of the inferior work that floods our churches, and who in the wake of an intelligent movement may be drawn to produce Art.

Our Present Artists.

A visit to the Royal Hibernian Academy will convince anybody that even the worst Academicians are able to paint better than the best of the so-called artists from abroad, with whose work we are all familiar, while several of the artists have produced paintings eminently suited to Church decoration, such as Miss Purser's work in Sir Patrick Dun's Hospital.

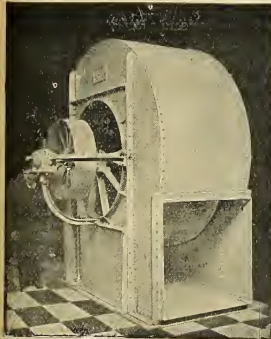
What is Needed.

What is wanted is really some means of contact between the consumer and the producer, and this the proposed Art Society will establish. I have not touched on wood-carving or brass or silver work, or enamelling, which at present are practically all foreign produced, though I believe it would be quite possible to establish these industries in Ireland. The Art Society could easily influence the Department charged with Technical Instruction, which seems only too anxious to develop Irish Art, to establish schools for the teaching of these Art industries. To these facts, as a further strengthening of hope in the future, I must mention the revolutionary change there has been recently accomplished in educational systems in Ireland. The National Board, owing largely to the heroic efforts of one or two men, whose names I need not mention, has arrived at some conception of what real education is. It has, for the first time, recognised that children have minds and hands and eyes. It has, too, in a hesitating and uncertain, but now sufficiently decided, way, at last acknowledged that Irish children are to be taught on Irish lines and directed to Irish ideals.

Drawing in Schools.

In the future, when children have been made accustomed to the pencil, which is now in every hand, we may hope that the old Art sense, deadened for centuries by false ideals in education and Art, will spring up anew to perfect the Art of early Ireland, an Art which never decayed, which was merely arrested by outside forces, but which we may reasonably hope has awaited our day to receive its fuller life. That the possibility of bringing about an Art revival is not a visionary project is proved by what has happened in Belgium. Forty years ago Belgian Church Art was at a lower level than ours. To-day there is a living ecclesiastical Art in Belgium owing to the exertions of a few enthusiastic workers, such as Baron Bethune, of Ghent, the architect, E. H. King, of Bruges, and others, seconded by the enlightened aid of the Belgian Government.

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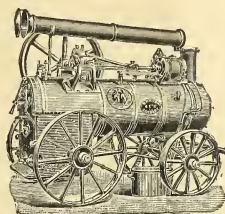
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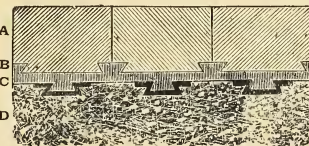
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OUR ILLUSTRATIONS.**"THE GEORGIAN PERIOD."**

Some time since the proprietors of the *American Architect*, with commendable enterprise, determined to collect and classify the old Colonial work of the British Colonies of the North American States, now the United States of America. The project was put in the hands of competent editors, who duly set to work, and the result of their labours is seen in the magnificent work which we now notice. It is made up of a series of eight parts, in separate folios, each containing a splendid selection of photographic views and pen-and-ink sketches and details, rendered in a delightfully free and charming style of draughtsmanship; together with the necessary descriptive letterpress, which gives a clear and interesting account of Georgian work in the Colonies—each variety being put in its correct chronological place.

Most European architects have, no doubt, been aware that the United States possessed many interesting relics of the Colonial era, but we make bold to say that these eight superb volumes will come upon them as a perfect revelation, for few people, on this side of the Atlantic, at least, seem to be aware of the wealth of beautiful work which exists in America.

America has, since the Colonial period, had successive revivals of historical styles, but, as our author observes, "back of these we now see there was a time when, in the days of the Georges, all our own mechanics used one simple and beautiful style of detail." From this it would seem that even amongst Americans themselves there is not that knowledge existing of what a wealth of beautiful eighteenth century work the United States possesses. As might be expected, New England is particularly rich in work of the period. There is little or no Dutch influence discernible; on the contrary, the settlers and their descendants seem to have carried with them the traditions of the finest, most delicate, most refined work of the mother country, and preserved the artistic taste unimpaired, by means of cultured intercourse with the old country. Where the buildings are of stone and brick, the traditional materials of English construction, there is little to mark them out from the best contemporary English work; but where the forms of the timber construction of the new country were availed of, there is displayed a most ingenious originality of treatment, novel without becoming vulgarised. The old forms familiar to all were retained and idealised in a new mode of workmanship.

* "The Georgian Period," being Measured Drawings of Colonial Work. Boston: The American Architect and Building News Co., 212 Tremont-street.

But to give completeness to the conception, the editors determined to add a British section to the work, and accordingly the final parts, vii. and viii., are chiefly devoted to a selection of the best of the Georgian work of England. The literary portion of the English section was in the hands of Mr. Paul Waterhouse, the well-known London architect, a sufficient guarantee of its excellence of treatment; while a short, but an interesting and well-illustrated account is given of Georgian architecture in Dublin; for this portion of the work Mr. T. E. Hudman was responsible. It is of limited extent, and leaves out many excellent examples, which we are fortunate in possessing; but no doubt in a later edition this fine work will be extended. Mr. Hudman has, by the way, kindly taken for us photographs of "Castletown," County Kildare—a Georgian mansion, not surpassed by any in Ireland, and few even in England. We hope to publish these at an early date. Mr. Hudman has, we are glad to see, attached due value to the innumerable examples of beautiful doorways of this period which we possess in Dublin. Our illustrations in this issue represent two of these, taken from "The Georgian Period."

Looking at the practical side of this unique publication, there is a solid utility and educational value about it, which cannot be over-estimated. The suggestiveness of much of the detail is decidedly valuable. Much of it partakes of a delicate "Adam" flavour; while one of the most commendable features of the whole work is the admirably clear and beautiful series of measured drawings which are given in profusion. But, beyond all this, it demonstrates the importance of the United States as a source of architectural inspiration.

*(To be continued.)***WHO WAS ST. ANDREW?**

In New York there are, of course, societies of all sorts—Scotch, English, Irish. The Scots call their chief Association after their patron saint, and the English do as much by theirs. And thereby hangs a tale. The St. George Society met the other evening, and there were various Americans there to share in the English hospitality. "Who was St. George?" one of them asked a brother Yankee. "Why, George Washington, of course," was the reply. "And who," the next question ran, "was St. Andrew?" Yankee the second paused to think a moment. "I suppose," he remarked, when he had grappled with the query, "it must be Andrew Carnegie."

A DOUBTFUL DESTINATION.

When Mr. Balfour started the construction of light railroads in the West of Ireland, several English visitors flocked over to see how the work was progressing. Seeing a train at the side of the platform, some of them got into a carriage in order to enjoy a little trip. As the train proceeded very slowly, one of the visitors put his head out of the carriage window, asking, "What is the matter?"

"It's draggin' ye up the hill be ropes we are, yer honour," was the reply.

"But," stammered the English visitor, somewhat alarmed, "if the ropes were the break where should we go to?"

"Murthin," replied Pat, philosophically, "I suppose that would depend intirely on how ye spint yer past life."

"AND HE DONE IT."

In a little Western town the other day, the most popular citizen soundly whipped a rough character, and to vindicate the majesty of the law, the offender was brought up for trial. The jury were out about two minutes. "Well," said the judge, "what have the jury to say?" "May it please the Court," responded the foreman, "we, the jury, find that the prisoner is 'not guilty of hittin' with intent to kill, but simply to paralyse; and he done it." The verdict was received with an ovation.

THE IRISH BUILDER.

A JOURNAL DEVOTED TO

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No. 998—Vol. XLIII.

HEAD OFFICE

AUGUST 1, 1901.

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TOPICAL TOUCHES.

We owe our readers an apology in respect of our last issue, in that several paragraphs of a humorous character belonging to another journal found a place on the last page of the number in question. We have at present to print and publish quite a number of journals of various interests, one appearing on nearly every day of the week, and, in the absence of our Editor, on holiday, the paragraphs in question—accidentally inserted by the printer—escaped the revision of our Editorial staff.

Mr. A. C. Scott, son of Mr. Archibald Scott, M.S.A., architect, of Drogheda, has been appointed a Clerk of Works at the Curragh, out of a dozen candidates. One of the applicants styled himself a "foreman bricklayer by profession." The world is going ahead.

Mr. J. B. McMahon, of Cork, has also been appointed Surveyor for the big works at the Curragh, on which no less than six temporary quantity surveyors are already employed. New schemes will, likewise, be started for Newbridge and Kildare.

The names of the successful candidates at the recent competitive examination for the post of Surveyor and Valuer, in the Valuation Office, Dublin, are:—D. N. Brunicardi, G. E. Warwick, S. S. Rea, and J. S. Hall. There was four vacancies and only six candidates. We gave particulars in our issue of May 8th.

Imitation marble is the latest thing in the "art" line, for a French chemist, while performing some scientific experiments, discovered a means to turn carbonate of lime into marble. The lime, it seems, is first powdered, and then placed in a steel cylinder at an enormous pressure; after this it is heated by means of a platinum spiral carrying an electric current. The powder in the neighbourhood of the wire becomes immediately crystalline and translucent, and, when allowed to cool, it is found to be a perfect example of clear marble. The cost of production, however, is stated to be too great to allow the discovery to have any commercial value, which seems a pity. We indulge in such an amount of sham these days that a sham marble tombstone would be quite in keeping with modern ideas of honesty.

The protection given by lightning-rods is efficient in proportion to the extent of exposed surface furnished with receivers, the number of intermediate conductors, and the completeness of the earth-connections. In general, extended metallic parts of a building, especially such as lead from the upper portions to the ground, lessen the probability of damage from lightning, even if they are arranged without any purpose of this kind; and an increase of the danger through incompleteness of the conductors is, in general, not to be feared. Branch lightning rods, if of iron, should not be of less section than one-fifth of an inch. For copper rods, one-half this section is sufficient; zinc rods should have one and one-half, and lead rods three times, the section specified for iron. All rods should be of forms not likely to be injured by the weather, and securely put up; and connections should be strong, and of large surface.

Lord Iveagh is following up his former generous gifts to Dublin by restoring the buttresses of St. Patrick's Cathedral.

A mason says that one summer's work in America takes more out of a man than five in Ireland. Everywhere there work goes on in June as in January, and the worker—especially the fresh immigrant—finds the summer simply a perfect purgatory.

We are pleased to note that in the House of Commons yesterday Mr. Balfour informed Sir Thomas Esmonde that the British Museum would be ordered to surrender the Celtic gold ornaments to the National Museum, Dublin, where, no doubt, they will shortly be on view.

A member of Mr. Pierpont Morgan's firm has authoritatively stated that the fight with the Amalgamated Association will be one to a finish. Five thousand more men have struck work. The presidents of the Anthracite Coal Carrying Railroad Companies say the firemen's strike will not be serious unless the Association is backed up by the United Mine workers of America.

How much hammering of sheet iron and throbbing of engines is permissible in a factory next to a board school? Such was the question put to Mr. Justice Kekewich in the Chancery Division recently. The London School Board complained that Messrs. Buck, Hickman, and Company at present make too much noise in their works, which are close to Hanbury-street Board School, Whitechapel. The Judge was of opinion that the volume of noise at present constitutes a nuisance, and he referred the matter to a competent civil engineer to decide what shall be done.

The figures relating to the Sheffield trams, given below, have a distinct value. The trams have been the property of Sheffield for three years, since when the number of passengers carried has increased from 19 millions to over 34 millions. The amount handed over for the relief of rates since the Corporation has had the tramways under its control amounts to £22,000. Another £10,211 has gone in the repayment of loans, and £16,627 in interest. Altogether a highly satisfactory state of things. Manchester has not been nearly so successful.

An ingenious use of steel-plates has been made at a lighthouse at Grande Pointe au Sable, in Michigan. The lighthouse, which is about eighty feet high, is formed of brick, with a stone base. It was erected in 1867, but almost from its completion it has suffered from the violent rain-storms of the district. For a long time pointing was undertaken regularly, but at length it was determined to encase the lighthouse with metal. The bent plates used varied from five-sixteenths of an inch to three-sixteenths of an inch in thickness, and they were united by means of angle bars. As a further precaution, a space was allowed between the brickwork and the metal-work, which was filled with concrete. The work was carried out by Mr. E. L. Woodruff, and the total cost has been about £,000 dollars. For that outlay a serviceable lighthouse has been secured, and it is believed that, owing to the success of the experiment, several others of the numerous lighthouses that are required near the big lakes and rivers of America will be treated in a like way.



Mullingar Asylum.—THE WATER SUPPLY.—A report was received from Mr. A. E. Joyce, C.E., in reference to the scheme submitted by Mr. Scott, C.E., for the supply of water from the parent institution to the chronic block. He agreed entirely with the terms of Mr. Scott's report, but adhered to his statement that the chimney shaft and boiler would be required. These Mr. Scott did not think necessary, as the power saved by the doing away with the heavy arc lighting could be utilised for the pumping.—Mr. Sheridan asked if Mr. Joyce were a permanent official of the Board.—Mr. Finegan said no. He simply did the work by the job when he was called upon, and on his plans, specifications, and the carrying out of the work he received 5 per cent.—Mr. Sheridan said as they were going to carry out this scheme in accordance with Mr. Scott's report, he thought it only right that Mr. Scott would be employed as the architect to carry out the work. He proposed that Mr. Scott be employed.

Sligo.—The contractors, Messrs. Little, who carried out some work in the lavatories, wrote to say that the defective woodwork complained of was carried out in accordance with the architect's specification.—Mr. Kilgallen said these things were made under the special direction of Mr. Deane, the architect, but they were scarcely suitable for an institution of this sort.—Mr. Jackson: But they were put in under the supervision of Mr. Deane.—Mr. Kilgallen: By his special directions.—Mr. Jackson expressed surprise that Mr. Deane would recommend such a style of work. The least he might do would be to supply the defects at his own cost.—Mr. Kilgallen produced samples of this broken and defective woodwork, which had split up. It was decided to draw Mr. Deane's special attention to this very defective work.—Dr. Petit also reported that some hot water pipes were being put in positions which would prove very dangerous. They would burn the hands of the patients, or afford an easy mode of hanging patients who had suicidal tendencies.—Mr. Kilgallen also supplied a report on this important matter.—Chairman: Are they put up in accordance with the original design?—Mr. Kilgallen: They are. He described on the map how they were made across two windows. He wrote to the contractors about it, but got no reply.—He was directed to follow up the matter, and see that those defective arrangements were not carried out.—We trust such insolence on the part of a clerk of works in reporting over the head of his architect will be noted in the proper quarters.

Hints on Selecting Traps.—The following hints on selecting drain traps will be found useful by some of our readers. Hardly any one trap will be found to comply with all requirements. For instance, one kind may have an easy out-go, which makes it unsuitable for certain purposes, while another kind may be all that is required except that it has not an easy out-go. Judgment will have therefore to be made on the added merits of a trap as compared with those of another design. The following are the points to which attention should be especially directed: The shape should be such that the trap is self-cleansing and non-angular; the trap should be simple in construction, and should have a water-seal sufficiently deep and permanent; the materials of which it is made should be impervious, sound, smooth inside, and durable; the trap should be as small as practicable, the mouth being large, with a cascade inlet; the throat should be contracted and non-obstructive, and the out-go easy and enlarged; the trap should be so fixed that it is accessible for cleansing, is protected from frost, and is secure from syphonage and back pressure. Each of the foregoing points could be enlarged upon, but the object of this letter is simply to briefly enumerate those matters. The remarks apply equally well to all traps required for the drainage of an ordinary house, and are based upon an experience extending over several years.

Clones.—It is now just five years since the works for supplying Clones with water were completed by Messrs. McMahon and Gray, contractors, from the designs of Mr. J. H. H. Swiney, M.Inst.C.E., of Belfast. Since then the want of proper sewers in the town has been sharply felt, and a couple of years ago the Council had again recourse to Mr. Swiney to advise them as to the best way of dealing with this question, which was rendered somewhat difficult owing to the configuration of the ground. Had pumping been necessary, the town could hardly have borne this expense, but by using Adams' Patent Sewage Lift for a very limited area this difficulty was got over. Mr. Swiney's report and plans were approved of by the Local Government Board, a Provisional Order obtained, and the works are now up for tender. They consist of purification works and main outfall sewer, with the usual branches, manholes, and lamp-holes in the streets. The sewage, when it reaches the outfall, after being coarsely screened, will pass without the admixture of chemicals, through settling tanks on to contact beds of large area, of which there are four, filled with a filtering media of cinders, screened to about the size of large peas. Three of these beds will be in constant use, the fourth being thrown out at stated intervals for rest. After remaining about 24 hours in the settling tank, the sewage passes on each bed in rotation, where it is held up and discharged automatically every two hours, thus giving each bed ample opportunity of aeration. With these works completed Clones will take a leading place among the smaller towns of Ireland for efficient sanitation, and its Council may be congratulated on the care and skill shown in looking after the health of the town, and solving the difficult problems connected with it.

Cements are Coloured by the addition to them of metallic oxides. Red oxide in the proportion of 10 parts by weight of oxide to 36 parts of cement will produce an imitation of red terra-cotta. The colouring matter must be intimately mixed with the cement in a dry state before being gauged. Before polishing is attempted, the concrete must be thoroughly set and hard. The polishing is done with a hard stone polisher and water. In polishing mouldings, the stones must be cut or filed.

Why was the Escorial Built?—The Escorial owes its origin to Philip II., husband of our Queen Mary, and suitor for the hand of her sister Elizabeth, who rejected him with scorn, and led him, out of revenge and love for holy Church, to fit out that Armada, which we all know came to such terrible and well-deserved grief. Its origin is characteristic of the monarch and the time in which he lived. Philip made a vow at the battle of St. Quentin that if he beat the French, St. Lawrence, on whose day the battle was fought, should have the most splendid monastery the world had ever seen. Thanks to 8,000 English, under Lord Pembroke, and Flemish infantry and German cavalry, the battle was won, and Philip went home to perform his vow. St. Lawrence is said to have been broiled on a gridiron, and Philip resolved that the monastery, built in his honour, should be a gridiron in stone. The architect, Julian Baptista de Toledo, made the plans, and on St. Lawrence's day, 23rd April, 1563, laid the first stone. Twenty-one years were occupied in the building, and on the 13th September, 1584, it was finished. Philip himself at once retired to some humble apartments in it, and there, with his monkish advisers, ruled for fourteen years. He died on the anniversary of its completion in 1598.

CORRESPONDENCE.

CLONMEL ASYLUM.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—I will say nothing about the *animus* of your contributor, but he is slightly wrong in his attack upon me. The County Surveyor has nothing further to do with the matter. You state that "some pretty active canvassing in various interests took place." That is true; but none of it was done either by or for me. In my opinion the "want of professional etiquette" was not on my side; and I have no doubt but that the Council of the Institute would agree with me. Some members of it have had similar experiences to myself, and have had to put up with a state of things (under the old rules of the Board of Control) which were not of their making.—Faithfully yours,

J. F. FULLER.

179 Great Brunswick street,
Dublin, July 20, 1901.

BACK NUMBERS WANTED.

TO THE EDITOR OF THE "IRISH BUILDER."

DEAR SIR,—Could you (or do you know of any reader who, having numbers of the IRISH BUILDER from the beginning of its issue to the end of vol. 61, that would) kindly allow me to look through the aforesaid numbers? I would gladly pay for the carriage both ways if I could have the numbers or volumes to look through them, and shall take great care of them. I wish to look at the entries about the parish registers of Dublin and other historical articles of that nature, so if I could get the loan of such numbers would be extremely grateful.—Yours truly,

PHILIP CROSSLE.

11 Trevor Hill, Newry,
Co. Down, 22nd July, 1901.

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ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

J. W.—If you will give us some further particulars we shall endeavour to secure the information you desire.

J. T. Rea—Many thanks. In last issue we resumed "Our Interviews." The other matters to which you refer are being dealt with.

A. Scott—Many thanks.

J. W.—For the purpose you mention hot water pipes, either large or small bore system, is the only plan which could be carried out at a low cost. The "plenum" system would, perhaps, be the ideal arrangement; but to be effective it should be applied to the entire house. It is, moreover, not a cheap system, and you would need "power" to work it.

"D.G."—The appointment of Assistant Surveyor to the Board of Public Works (Ireland) is given after competitive examination. The pay is good to start with. There is the certainty of a pension, and the work, if not very interesting, is not too hard. There is a good deal of outdoor country work, so it is a healthful occupation, too. The examination is fairly searching, but the competition is not usually very keen. The prospects of promotion are moderately good to a certain point, but they cannot be described as brilliant. You can get the examination papers and full particulars on application to the Civil Service Commissioners, Cannon Row, Westminster, S.W. Owing to lack of competition, several vacancies were lately filled without competitive examination. The person appointed has to pass a qualifying examination.

C. F.—RATING.—We have looked up the law on the subject of Rating. In cases where no comparison can be made with existing tenements, we find that the basis for calculation of rateable value is, in the case of new buildings, the cost of building same, or in the case of old buildings, the gross value of same.

The rating then is calculated at 5 per cent on same. Hence all the measurements and surveys made by the Valuation people. This principle has been *approved and established* in quite a number of leading cases on rating. The principle is, however, it would seem, to be used only in determining the (as it were) "nominal" value of the premises and *not* for purposes of rating. The rating is to be calculated, then, *not* on the rent paid by an actual tenant (though that may be *evidence of value*), nor upon the worth of the premises to him—but upon the rent which a "hypothetical" tenant would give. There are several cases establishing this procedure, but the standard case on Rating seems to be the *Erith Case* (House of Lords), in which Lord Herschell, in his judgment, applied this principle. No regard is had to questions of tenure under any circumstances in buildings, nor to the profits realised. A £600 valuation would represent at 5 per cent, a capital value of £12,000. Even supposing they could all be erected for £20,000, that would represent a rateable value of £1,000. The only question then is, have the Commissioners of Valuation taken off enough for the consideration that these premiums are of *special value* to the present occupants, and would not be worth anything like that sum to the "hypothetical tenant" of the Erith case? If a respectable house agent could swear that no ordinary purchaser would give more than, say, £8,000 for the buildings as they stand, and without any lands, the Recorder would certainly reduce the valuation. The question is, would it be put as low as £8,000 when such a lot of money has of late years been expended on new works alone. An architect's estimate "of value" would work out a very large sum; the only chance of a reduction would seem to be to apply the Erith case, if it can be done. Counsel's advice should be had on this point. At all events, there would be no great harm in making the attempt. The assistance of an expert house agent is essential.*

THOMAS HORAN, 3 Brighton-terrace, Kingstown.—Captain Hore's "History of Wexford" can be had from Elliott Stock, 52 Paternoster-row, London.

P. CROSSLE.—We are not sure if we have complete back numbers of early date. We should be delighted to give you every facility for reference. We could, however, hardly send you our office file. The National Library has complete issue since start.

G.A.T.M.—Many thanks; the matter is under consideration.

* Cases cited in comparison with other tenements:—Owen's College case, 18 Q.B.D., 405; Dodds v. Assessment Committee South Shields Union (profits not to be taken in consideration), L.R. (1895), 2 Q.B. 133; Reg. v. Fletton, 30 L.I.M.C., at p. 93, hypothetical tenant.

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A Select Committee of the House of Lords have passed the preamble of the Shannon Water and Electric Power Bill. The measure, which is an important one in its bearing on the industries of the West of Ireland, proposes to incorporate a company with a capital of £360,000 and £180,000 borrowing powers, and empower them to carry out a scheme to utilise the waters of the River Shannon for the purpose of generating electricity, and to supply energy for lighting and power purposes over an area of 30 miles radius from the power station to be situated 4½ miles from Limerick. The works to be constructed under the Bill consist of a short canal to carry the waters of the Shannon to the generating station to be erected at Clonlara, where a fall of 40ft. is obtained. The water will be returned to the Shannon at a point six miles below the intake. The promoters expect to find their best customers among the industries of the city of Limerick, and have entered into an agreement to supply the tramway company of the city with energy in bulk, and it is expected that the Corporation, who support the scheme, will also take the current necessary for the lighting of the city. It was pointed out that, in the absence of coal, much might be done towards promoting the industrial prosperity of Ireland by making use of its magnificent supplies of water. The project has the approval of the Fisheries Board and H.M. Board of Works and private owners, and arrangements have been come to for the construction of a weir to keep up the river and to provide for the supply of compensation water in the dry season. The Bill has already passed the House of Commons.

PRACTICAL RESULTS OF TRUE TECHNICAL EDUCATION.

By JOHN SHANKS, Tubal Works, Barrhead.

Technical Education.

Technical Education is a term of which the meaning is but too frequently misunderstood, with the result that what is so often thus mis-called, is begun much too early in life, and is, in consequence, substituted, either partly or wholly, for sound general education. The resulting separation of practice from theory, or elevation of practice over scientific knowledge, is alike dangerous and disastrous. It is quite absurd that a boy of twelve (and this is the tendency of the elementary school idea of the matter) should be devoting time to the study of chemistry, physics, and other subjects of a similar kind, while his knowledge of, and ability to express himself clearly in, his own language is far below a reasonably satisfactory standard. True technical education—that is, the special scientific knowledge necessary for the art or craft that forms one's daily occupation—should not be begun till the necessary preliminary education has been thoroughly acquired.

Experience Teaches.

Experience, both at home and abroad, has clearly shown that the practical knowledge obtained in the workshop is far from being complete, unless it be accompanied by sound theoretical knowledge. The neglect of the latter requisite by home workmen has already driven out of the country several industries, for which foreigners have, by superior training, given themselves higher qualifications; and has, besides, enabled several other countries to compete with us in every market.

America.

If we turn to America, we have but little difficulty in discovering the causes, in that great continent, of the marvellous progress and industrial supremacy of which we hear so much. In the first place, the American manufacturer endeavours to bring every article he manufactures to a standard. This enables each particular part to be made, and each particular operation to be carried out, by special machinery, a method which tends at once to greater expedition in manufacture, and to very considerable reduction in cost. The principle has been extended even to bridges and locomotives, with the result that more speedy production and lower price were the chief reasons for placing some recent important British contracts in these two lines with American firms.

Master and Man.

Again, the relation of the man to the master is important. In America it is one of mutual advantage. If a man has shown that he can learn well, and work well, he gets every encouragement; he is not, as a rule, bound down to a fixed wage that any average workman can easily earn, but is paid for what he can do, and facilities are given him to gain further experience. He is frequently allowed time for study, and very often the expense of his technical education is borne by his employer. The success of this process of mutual advantage, by which, on the one hand, the energetic and clever workman is enabled to push his way to the front, and, on the other, the employer is enabled to make use of his employee's brains, is one of the chief reasons why America is the home of invention and the typical land of progress.

Training.

The leading engineering firms always train their men with the utmost care. They require, first of all, that the would-be apprentice shall be not less than 18 years of age, and that he shall produce evidence of having had a sound general education; and thereafter they undertake to teach him the whole art and science of his chosen craft, at machine, at bench, and in every variety of tool work, throughout all the different shops. Technical education and training for young men, before they enter the works, are deemed most excellent things, and have the full sympathy of such firms.

Machinery.

Labour-saving machinery and automatic machinery are everywhere in evidence, and the general use of these, more especially of automatic machines, is of very great importance. So long as engineers in Great Britain are under the necessity of working one man one machine, they have no chance against their American brethren. At the works of the Sturtevant En-

gineering Company, for example, one man works six lathes, and at the works of the Yost Typewriter Machine Company one man superintends eight automatic machines. At the works of Pratt and Whitney, at Hartford, a man may be seen working at one time a planing machine, a drilling machine, and a shaping machine; another man minding two cutting off machines; another working five special lathes, fitted with stop; and men will willingly work ten turret-head automatic machines at one time. At the Hartford Screw Nail Works one man will superintend as many as eighteen machines.

Education in America.

So vast is the educational development of the United States, so extensive the area, so various the experiments in educational systems and methods, that it is hardly possible, in brief space, even to enumerate the educational provision made, and the results obtained, by means of State and Municipal subvention, and through the munificence of private individuals; but in travelling through the States and Canada the fact is everywhere forced strongly on one's attention. Everywhere the manufacturer endeavours to found, or to help to keep going in his immediate neighbourhood, a school of technology, in which instruction may be given to his workmen in the science connected with the particular industry in which they are engaged.

Liberality.

The liberality of rich American citizens in the foundation and endowment of such institutions is a potent factor in the educational development of the nation. As examples of it we may particularly mention the Pratt Institute, Brooklyn; the Drexel Institute, Philadelphia; the Armour and Lewis Institutes, Chicago; Webb's Academy for Shipbuilders, New York; the splendid buildings and equipment of the mechanical, physical, and chemical departments of the McGill University, Montreal; the Leland Stanford Junior University, California; and the new University of Chicago. The total value of the property held by such colleges and universities amounts to the enormous sum of £57,727,434, and their total income is nearly £5,000,000.

Germany and the U.S.

It is clearly recognised in the United States that Germany has entered upon a most determined struggle to obtain the first place among the great industrial nations; able not only to supply her own wants, but to carry keen competition into every open market in the world. It is no less clearly recognised that the economic position of Germany as a producer is due very largely, if not entirely, to her admirable system of general education, leading up to her technical high schools and polytechnics and splendid universities. By means of commercial high schools the educated young German is trained to adapt himself to the requirements of commercial life in all parts of the world; and through the schools for special trades and industries, particularly those for textile productions, he is trained to be able to turn out goods of high finish and fine colouring and design at the minimum of cost, so that by their quality and low price combined, they command the market.

Mono-Technic Schools.

This being so, the establishment of mono-technic schools—that is, schools for special trades and industries—is strongly advocated by all the most enlightened American manufacturers; and the outcome of their efforts may be seen in the school of Industrial Art, Philadelphia; and the Textile Schools at Philadelphia and Lowell, in both of which a thorough grounding is given in the theory and practice of the art of manufacturing all fibres known in the weaving industry.

Germany the Model.

Though, however, these are notable examples of their kind, it is still to Germany that we must turn if we wish to see the mono-technic school at its best. As an instance, we may take the school at Crefeld for teaching weaving and dyeing and the allied arts and sciences. Founded through the far-seeing policy of German thinkers, who recognised the need of technical skill in connection with the weaving industry, Crefeld itself has benefited to such an extent that silk goods formerly made in France are now made here and exported to France, and the success of the undertaking has had a wonderful result all through Germany. The school itself has served as the model for others of a similar kind all over the world. Distributed among the various trades in Prussia alone there are now 248

mono-technic schools, 13 of which are devoted to the textile industry, while hardly a single trade is without a school specially equipped and staffed for its needs.

The Root of Industrial Progress.

Just as great chemical industries have already established themselves in Germany and Switzerland, to the serious loss and permanent injury of Great Britain as a manufacturing and commercial nation, so engineering industries of the first importance and on the largest scale are rapidly growing and threatening to do serious harm to another valuable department of our trade. Helping to equalise the conditions of the struggle with our home industries, these countries have many other advantages working silently but surely in their favour—the command of electrical power, cheaply developed and readily distributed, better workshop organisation, widespread introduction of automatic tools and appliances, and an ample supply of labour at a low cost for working these—but, at the root of the whole matter, and mainly contributing to the wonderful economic results obtained are the schools we have noticed. If we are to maintain our position as a great industrial community, it must be on the principle of imitating all that is best in this method of working, and by the establishment on similar lines of properly organised and equipped training institutions.

THE COUNTY SURVEYORS AND PRIVATE PRACTICE.

The following list of a few instances of public officials who engage in private practice may be found of interest. Every case can be substantiated; but, for obvious reasons, it is not possible to give names:—

CASE A.—The County Surveyor has been for years engaged extensively in private practice; did large mansion costing several thousands of pounds; was able to absent himself for weeks together attending private arbitrations in Dublin. He is at present engaged in carrying out waterworks in the town of —, outside of his county altogether.

CASE B.—The County Surveyor was architect for a chapel at Castlebar; has been appointed architect for additions to the Castlebar Asylum estimated to cost £45,000.

CASE C.—County Surveyor has carried out extensive building works in — city and county, and could spend weeks in Dublin attending private arbitrations. His county is remarkable for the worst roads in Ireland, as well as newly-built falling bridges.

CASE D.—The County Surveyor has for years been engaged as architect to the District Lunatic Asylum, his average commission for several years past being about £350 per year.

CASE E.—The County Surveyor has carried out extensive asylum works.

CASE F.—Same as last, and at present canvassing for a big job. This is a very bad case.

CASE G.—County Surveyor, until recently, has had extensive private practice.

CASE H.—Board of Control — Asylum. Clerk of Works paid £3 per week by the Board to look after the work of new additions and structural improvements of asylum; cost £40,000; was permitted by the Board of Control, in opposition to the wishes of the responsible architects, to design (at least, copy from other churches), and superintend the erection of a large R.C. Church costing £16,000, as well as design and superintend the erection of minor works of a like character.

CASE I.—The County Surveyor has a very extensive practice, and can always find time to absent himself from his county for considerable periods, attending private arbitrations and giving expert evidence in Dublin.

CASE J.—Has considerable private practice; based his claim for increased remuneration on the ground that his official duties now interfere with his private practice; has lately been called upon to resign in consequence of neglect of duty.

The County Surveyors' salaries range from £500 to £1,000. All the County Surveyors are assisted by a staff paid out of the rates.

EXPERTS: A NEW GLASS.

The technical expert holds a recognised place in the practice of architecture, which has become a much more complex business than it was in the century recently closed. As a necessary intermediary between the architect and the tradesman, the expert occupies a position that at one time was held by the foreman of the builder—say carpenter or plumber. Any part of the construction that called for a more than usual amount of skill, such as the construction of a roof of wide span, or any ironwork, was left to the foreman to supervise, under the architect's general control, in the buildings of the day. We have now buildings in which the design, the structural work, the heating and sanitary arrangements, the electric wiring and light installations, hydraulic lifts, &c., are far beyond the acquirements of skilled mechanics. A new order of men possessing a higher standard of education, and who have been trained specially for these branches of construction, have arisen, to whom the architect has to trust special departments of his work.

Special Assistance.

May it not be worth while to consider the advantage, or otherwise, of the employment of experts in these special branches of construction, as colleagues or assistants of the architect? The late Sir Charles Barry and Sir Gilbert Scott engaged expert engineers to assist them in the design and construction of certain structural works, such as the great iron roof over St. Pancras Station of the Midland; and many of the principal iron roofs designed by architects have been supervised by experts. Sir Gilbert Scott called in Mr. Shields to assist him in the ironwork ties, &c., required in the restoration of Salisbury spire. For a building with a large roof of iron or steel construction, expert assistance in the supervision, and, perhaps, also, in the design, appears absolutely necessary. We cannot expect the architect to know the proper size of sections for steel principals, struts, or tie-rods; the best detail for a hinged joint, or for the seating of a long girder to allow for changes of temperature. Such details for a large span are better left to the structural engineer.

Complex Buildings.

A building with complex ironwork affords a good opportunity for a division of skill and experience. The more complex the building, the greater is the need for expert supervision. A modern hotel with all the accessories of hydraulic power lifts, electric lighting, sanitary fittings, and warming and ventilating arrangements; or an "up-to-date" theatre with fire-resisting appliances, hydraulic appliances for stage, fire extinction, ventilation, machinery, &c.; or a block of city offices fully equipped with the latest arrangements for warming, lighting, and ventilating—is beyond the ordinary duties imposed on the architect. In the arrangement and details of these appliances he must seek the opinion and experience of the specialist, or leave them uncontrolled to the contractor or tradesmen. As the bricklayer, carpenter, and mason require the guidance of the foreman, so the tradesmen who contract for the fixing of the hot-water pipes and apparatus, hydraulic lifts, or electric power and lighting installations naturally fall under the control and supervision of men who are experts in these branches.

The Economy.

Then there are the items of extra cost and labour to be considered. The engineering arrangements of public buildings, like workhouses, asylums, hospitals, necessitate careful plans and estimates. The cold and hot water-supply, heating, lighting, and power arrangements form, as we have been reminded, important items in the expenditure. Who will say that the architect is able to arrange these matters satisfactorily? Expert advice in the carrying out of the scheme would often make a considerable saving in the cost.—*American Architect.*

To Obtain Pure Unfiltered Water.—If powdered alum is added to water, which, for some reason or other, cannot be filtered, in the proportion of a teaspoonful to every four gallons, and stirred briskly round in it, it will have the effect of precipitating any impurities to the bottom of the water, and leaving the latter pure and clear.

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4s. per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly forward renewals to 11 Lower Sackville Street, Dublin. Subscribers can also assist by mentioning the paper, especially when corresponding with advertisers, and bring it under the notice of friends likely to subscribe.

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No. 998

Extraordinary Attack on an Architect by a County Surveyor.

A Westmeath paper which reaches us contains a report of a recent meeting of the Mullingar Asylum Committee, and it affords chastening reading for architects. The names of Messrs. Anthony Scott and Son, A.R.I.B.A., Drogheda, and Mr. Joyce, the County Surveyor, had been respectively called upon to report upon a scheme for supplying the asylum with water. Both competitors had already entered on certain preliminary enquiries, and made tentative reports; in consequence, the respective views of each were known one to the other. In submitting his final report, which was read at the recent meeting above referred to, Mr. Joyce took occasion to make a very unwarranted attack on Mr. Scott, alleging that the latter gentleman had copied his specification! Now, Mr. Joyce did not back his statement by any proofs whatsoever, and in alleging this grave breach of decorum, gave no particulars. Mr. Scott is so well known, both in Ireland and in London, and so deservedly popular with his professional brethren, that, to all who know him, such conduct must seem impossible. Such vague allegations are not in accordance with the ordinary decencies of professional practice, and are not calculated to further the decidedly waning influence of the county surveyors in their assumed role of architects and private practitioners. One course alone, it would appear to us, seems open to Mr. Joyce, namely, either to substantiate his charge, or to make full and ample apology.

The Sligo Asylum Again.

Some time since, Mr. Kilgallen, the Clerk of Works of the Asylum, took occasion to report to the Asylum that certain works passed by the architect, Mr. T. Manly Deane, were defective. The committee, seemingly ignoring their architect, stand by the Clerk of Works. This is one of the evil legacies left by the Board of Control. Is it too much to express the hope that such conduct upon the part of a clerk of works, a person occupying a subordinate position, and supposed to be the representative of the architect, may not any longer be tolerated? Some years since, the same Clerk of Works, acting on the same job, undertook to design a large and important work. The writer of this article conceived it to be a serious grievance to qualified architects that such conduct should be condoned by the late Board of Control and interested himself in the matter. He applied

to the late Sir Thomas N. Deane, R.H.A., the architect, for his sanction in approaching the Board of Control. Sir Thomas expressed his sympathy, and very readily agreed that the Board be approached. Armed with this approval of the responsible architect, the writer sought an interview with the late Mr. Samuel Usher Roberts, C.B., the architect to the Board of Control, who gave his positive and personal assurance that the Board of Control would at once put a stop to such an aggravating state of things by prohibiting, not only at Sligo, but elsewhere, clerks of works in the employment of the Board, from competing with qualified practitioners. We regret to say that this positive assurance proved to be a promise which was never kept.

The Clonmel Asylum.

We publish in this issue a letter from Mr. J. F. Fuller, architect, in which he takes exception to our recent comments upon the circumstances connected with the recent appointment of an architect to the Clonmel Asylum. Mr. Fuller alleges animus upon our part. We can only reply that the animus exists only in his own imagination. We have not even the honour of his acquaintance. We commented in what we consider a fair spirit on matters of public and professional interest. Our information was based upon what we believed to be accurate and unbiassed reports from reliable local sources. Mr. Fuller apparently limits his complaints to two heads—namely, that canvassing took place, and to our strictures upon the action of architects who, in the first place, accept less than the recognised commission, and, secondly, ally themselves with persons who are not regular members of the architectural profession. We frankly accept Mr. Fuller's statement that no canvassing took place on his behalf; but our local informants appear to hold differently. We can only conclude such action was unknown to Mr. Fuller. We did not blame Mr. Fuller for any canvassing—real or fictitious. We simply made a statement. Mr. Fuller says many architects were "compelled" to accept low commissions. Any man who works for less than five per cent. may offer the same explanation. No person is nowadays "compelled" to do work for less than the value he chooses to put on his labour. If he secures additional work by so doing, that is his own affair; and he can hardly, in all fairness, complain if comment is made. As to the County Surveyor, Mr. Fuller cavalierly throws him overboard.

PALACES FOR THE POOR.

Lord Rowton, in the presence of a distinguished assembly, opened the new Guinness Trust Tenement Buildings at Hammersmith last week.

These new buildings for the accommodation of the poor are the outcome of the generosity of Lord Iveagh. As Sir Edward C. Guinness he, in 1889, placed the sum of £250,000 in the hands of trustees for the purpose of providing at low rents healthy and commodious dwellings for wage-earners.

The buildings form the eighth group of dwellings erected by the Guinness Trust. They consist of four large parallel blocks, which have altogether housing for 367 families. The rents vary from 2s. 6d. for one room to 6s. 6d. for a suite of four rooms.

The tenants are restricted to those earning less than 25s. per week, and it is expected that the return will produce 3 per cent. The buildings contain thirteen free bath-rooms, provided with hot and cold water day and night, and also a large club-room, provided free with the best current periodicals and newspapers. There is a laundry, and a fine playground for the children. Every room is equipped with electric light, switched on free and simultaneously from the superintendent's office.

In the basement is a large storage cellar for coals, to be retailed to the tenants at cost prices—an experiment new to the trust buildings. Another innovation is storage rooms for perambulators and bicycles, etc., at one penny per week.

Nearly all of the rooms in the new buildings have already been engaged.

ELECTRIC TRAMS.

ENGLAND VERSUS AMERICA.

Some three or more years ago the great firm of Dick, Kerr, and Co., of Preston, well known as makers of electric cars, discovered that they had hopelessly fallen behind the times—everywhere they were ousted by the pushful Yankee. They got a big contract in Spain, but could only execute it at a profit by becoming the mere sale agents of American combines. The firm faced the situation. In the month of June, a couple of years ago, a certain fifteen acres near Preston was a bare field; to-day it is covered with the largest and most up-to-date electric car factory in Europe, and the firm can now supply 4,000 electric motors a year from its works, and turn out four finished tramcars a day. It can take in hand the whole tramway undertaking of a town—providing a complete service from beginning to finish—track, rolling-stock, electric equipment, generating station, and execute all the work within twelve months.

It is now laying down electric tramways in Calcutta, and causing the American Consul in that city to send home reports lamenting the lack of American enterprise.

Organising a New Business.

Messrs. Dick, Kerr, and Company sent to America for the best talent to design new works. Nothing short of the best would satisfy them. In the meantime they had still to rely on foreign products, and their determination to go into the business themselves led to something like a boycott in supplies from America.

Making Things Hum.

Mr. George Fleet, the energetic manager of the company, called in the services of the best men he could obtain. He drew on America for brains where necessary. The American system of interchangeability of parts is adopted. The experience of the American works managers is that the British workman is quite as capable as the American in handling machine tools, and, given the same facilities, can turn out the same amount of work. The piece system is generally adopted in the factories, and the working hours are fifty per week. With splendid factories and an able staff of young men things soon began to hum, and now the firm is executing more than fifty per cent. of the whole tramway work in the country. There is no excuse now for any municipal corporation or tramway company to go abroad for tramway plant.

Tramways in Calcutta.

Although Messrs. Dick, Kerr, and Company are a new firm for electric tramway purposes, they have already executed many important works. They have just handed over a complete electric tramway system to the London suburb of Eastham at an outlay of £155,000. They are providing tramways in Calcutta at a cost of £300,000. They supplied Liverpool Corporation, in six months, with cars which, if placed end on end, would have been a mile in length. The company have obtained the contract for Capetown because of lower prices and quicker delivery than any competitor. It took the contract on April 1 and promised the delivery of cars on August 1. The cars were shipped a month ago! The Portsmouth Town Council gave an order for a complete electrical tramway equipment at a cost of £350,000. The whole system had to be complete and running within eleven months. The order was given on February 22, and the first fifteen miles will be opened in a fortnight. Several towns which placed their first orders for cars in America, because English firms could not compete in price, have given their second orders to Messrs. Dick, Kerr, and Company, and the two new model cars which they have introduced—a four-wheeled top-seat car used in Liverpool, and a bogey-wheeled single-decked combination car, with outside seats as well as an inside compartment—are being generally adopted. The home manufacturers, such as the Brush Electrical Engineering Company and Messrs. Milne, car builders of Birkenhead, have also been showing greater enterprise, extending their works and improving their methods of production.

The Coming Boom.

Within the next few years we shall see a tremendous development in electric traction in England, and the supply of the

material will be one of our greatest industries. Manchester alone is spending over £3,000,000 on its new system; Portsmouth is spending £600,000, and these figures indicate what is being done in other towns. Dublin possesses one of the finest electric systems in the world, many of the cars having been made in Dublin. New districts will be opened up for pleasure, and new rural industries established. Schemes have already been prepared which, if carried out, will cost more than a hundred millions. The electrical works and car works which are now being laid down to meet this coming development—including the works of the Westinghouse Company at Manchester, and the works of the British Thompson Houston Company, which has again passed under American control—will be more than equal to supply the home market. British manufacturers should, therefore, be able to outstep competition from the Colonies.

QUEEN VICTORIA MEMORIAL.

At a meeting of the Council of the Society of Architects held on Thursday, April 25th, 1901, the following resolution was unanimously passed:—

"That, in the opinion of the Council of the Society of Architects (founded 1884) all architects being British subjects should be granted the privilege of showing their loyalty by submitting designs for the National Memorial to Her late Majesty Queen Victoria, under conditions which should put those resident in distant parts of the empire as nearly as possible on an equal footing with those living in England, and that a copy of this resolution should be sent to Viscount Esher with the request that it be laid before His Majesty the King."

April 30th, 1901.

DEAR SIR,—I have the honour to acknowledge the receipt of your letter of the 26th inst., forwarding the resolution passed by the Society of Architects, in regard to the National Memorial.

I will lay this resolution before the King when His Majesty returns to town.—I remain, dear sir, yours obediently,

(Signed) ESHER.

The Secretary, the Society of Architects.

July 12th, 1901.

DEAR SIR,—In further reply to your letter of the 26th of April last, forwarding the resolution passed at a special meeting of the Society of Architects, I have now the honour to inform you that, in accordance with the request contained therein, this resolution has been laid before the Executive Committee appointed by H.M. the King.

I am instructed to say that the committee see no reason to depart from their original decision, taken after careful and due deliberation.—I have the honour to remain, your obedient servant,

(Signed) ESHER.

The Secretary, the Society of Architects.

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Preparing Whitewash.—A good way of preparing whitewash is to break up 6 lb. of whiting in a pail containing just sufficient water to cover the whiting; when the latter is thoroughly slaked and settled down, pour off the surplus water stir the dissolved whiting with the bare hand and arm, and add 1 qt. of hot double size. Incorporate the two and set aside in a cool place to form a jelly. To prevent a yellow shade, grind a little indigo or ivory black in water and mix with the whiting and strain before adding the size. When required for use, dilute with cold water and use at once. Excess of whiting will cause the distemper to crack and flake; excess of size will impart an "egg-shell" gloss. To prepare a good ceiling whitewash proceed as above as far as the slaking of the whiting; thoroughly mix it with the hand and stir in a hot solution of Young's patent size; use a cupful of size to every 2 gal. of the dissolved whiting. If the wash is to be perfectly white, potato starch may be used. Set aside to jelly, and then with a distemper brush rub it through a piece of coarse canvas stretched over the top of a pail. For use, dilute with cold clean water.

THE COMING AGE OF GLASS.

Alluring Dream of a Celebrated French Savant who Believes we shall Live in Glass Houses.

Our good friend, M. Yves Guyot, editor of the Paris *Siecle*, sent us a fraternal greeting at the beginning of the new century. Not the least interesting part of the message was a sentence, in which he said that M. Jules Henrivaux, till lately the director of the great glass manufactory at St. Gobain, had predicted that the new age would be the Age of Glass. Through the kind offices of M. Guyot, M. Henrivaux has sent us some elaborations of his idea, and we have found them profoundly interesting.

M. Henrivaux is an enthusiast on glass. He believes it to be the material of the future. He does not pretend that we can look for glass cannons, or glass men-o'-war, or glass greyhounds of the ocean, nor does he contemplate the substitution of vitreous machinery for that which we now employ in our various processes of manufacture; but he does claim that glass is the best substance known to us for every kind of structural purpose, and especially for dwelling-houses. In short, if the visions of M. Henrivaux are realised, we shall all be living in glass houses before very long.

The Virtues of Glass.

The point of the idea is found in the inexhaustible supply of the materials from which glass is made, in its adaptability to all shapes and forms, its durability, and its cleanliness. With regard to the second point, it is obvious that glass can be shaped, coloured, and decorated to an extent of which no other material is capable, and it is upon this aspect of the idea that M. Henrivaux lavishes his imagination.

There are six ways in which glass can be manipulated. It can be cast into window-panes, paving-stones, panels, etc. It can be moulded into cornices, slates, wall decorations, and even statues. It can be blown into bottles, tumblers, vases, and all the utensils comprised under the name of "glass ware." It can be blown and ground into crystals, lenses, prisms, and other objects of art and utility. It can be drawn into the finest threads, and made into pipes, baskets, and dress materials. It can be turned into mosaics and enamels, and can be brought into the closest imitation of most of the precious stones.

Imagine M. Henrivaux the constructor of a glass house. The foundations and the walls would be constructed of a variety of glass, recently invented, called "stone glass," which has already successfully withstood the severest tests. When crushed it gives a resistance three times as great as granite. When subjected to heat or cold it is found less sensitive than steel. When submitted to friction it shows less wear than porphyry. Shock, as of a hammer blow, it resists to a degree twenty-two times as severe as that which would fracture marble. The test of tension has practically no effect on it whatever.

Our Glass Houses.

The walls, then, would be built of glass, held together by angle-iron, so as to permit of a hollow space through which pipes could pass (the pipes themselves being glass-work) conveying hot air, hot and cold water, gas, electric wires, drains, and everything needed for the health and comfort of the inhabitants. Stairs and balustrades, ceilings and wall decorations, mantel-pieces and fire-places, would all be constructed of glass. Some of M. Henrivaux's conceptions in the way of decorations, in which the glass is made opaque, or tinted with brilliant colours, or made silver and golden, or arranged in prisms and crystals, with facets like diamonds, are, perhaps, too fanciful to be taken seriously; but through them all there runs the same enthusiasm, the same belief that glass, as Thiers once said of Louis Napoleon, is capable of anything.

Our chairs and tables in the new glass age, will be made of vitrified material, toughened to the strength of oak and mahogany. Our cooking utensils, our plate, and cups and saucers, will be made of the same substance. Even our knives and forks will have glass handles, if not glass blades.

The new glass house will be absolutely clean, and practi-

cally indestructible. The whole of its surfaces can be washed from the top storey to the basement, without a trace of humidity being left. Dust cannot collect on its polished surface, and the spider will find no place on which to hang its cobwebs.

Glass Paving-stones.

They have already begun to pave the streets of Paris with glass, and it is found that the substance, while practically indestructible, is admirably suited to the feet of both men and beasts; and as it neither holds nor makes any dirt, it is absurdly easy to clean. Its only fault is that it somewhat increases the noise of the traffic, but even this might, by and by, be overcome.

One of the features of last year's Exhibition was the Palais Lumineux, or the Palace of Light, built entirely of glass. It was to some extent the realisation of M. Henrivaux's ideal. Not only was it of solid construction, but the adaptability of glass to every class of decoration in form and in colour, aided by its various degrees of opaqueness and transparency, enabled its builders to raise a structure which as far transcended our own Crystal Palace as a diamond outshines the imitation.

Cost Not Excessive.

The question of cost has not been left out of account. Glass can be made out of almost anything amenable to the influence of fire. The stone-glass to which reference has already been made, is manufactured mainly from what have hitherto been regarded as waste substances. The slag heaps which disfigure our mining and iron districts are all convertible into glass. Evidently the days of bricks and slates are numbered. Perhaps it might be possible in connection with one of the many projected exhibitions to construct on a modest, but sufficient scale a dwelling of the kind M. Henrivaux describes. People would then be able to experience the actual sensation of walking along glass floors, of climbing a glass staircase, of being surrounded by glass walls, of sitting on glass chairs at glass tables, drinking tea out of glass cups, and stirring it with glass teaspoons.

How far this could be accomplished with due avoidance of monotony it is hard to say. Certainly M. Henrivaux is enthusiastic enough to believe in the fullest developments of his idea.

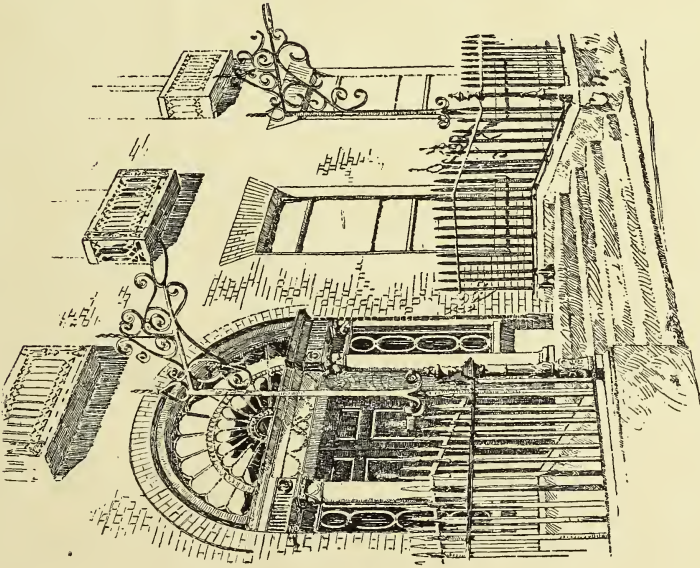
It is perhaps a fanciful idea, but it must be confessed that with M. Henrivaux's guidance, an inspection of the brilliant, indestructible glass houses of the future is a thing to charm the imagination and delight the aesthetic senses.

Salisbury Cathedral, which has the peculiar feature of containing the same number of windows as there are days in the year, is built in the Early English style, and is also remarkable for the shape of these same windows. They are triple windows, formed from an elegant combination of three lancets.

As many days as in one year there be,
So many windows in this church we see;
As many marble pillars here appear,
As there are hours throughout the fleeting year;
As many gates as moons one year does view—
Strange tale to tell! yet not more strange than true.

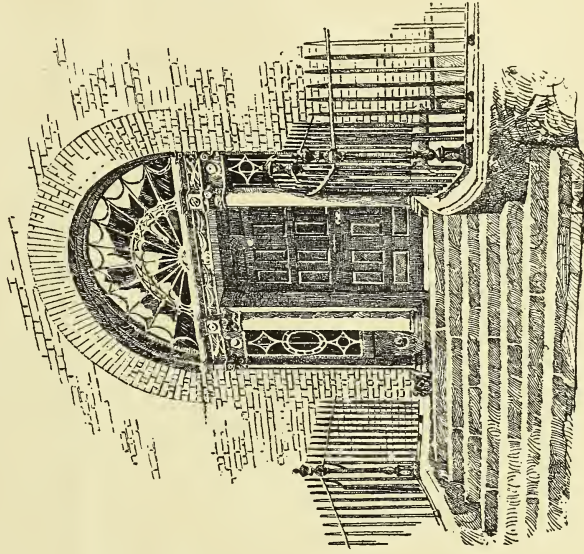
Wollaton Hall, in Nottinghamshire, also has 365 windows.

A Roman Road was an elaborate engineering work. It had a foundation of hard earth, a bed of large stones, two or more layers of stones and mortar, and gravel, lime, and clay, and a causeway fifteen feet broad paved with stones. Watling-street ran from London to Wroxeter, with continuation from London to Dover, and from Wroxeter into Wales. The Foss ran from Seaton, in Devonshire, to Lincoln, and, under the name of High-street, to the Humber. The Icknield Way went from Icklingham, near Bury, to Wantage, Cirencester, and Gloucester. Ermine-street ran through the Fens from Lincoln to London. Besides these, there were many cross streets. One great road ran from Exeter to the Land's End, and another went from St. David's to Carnarvon.



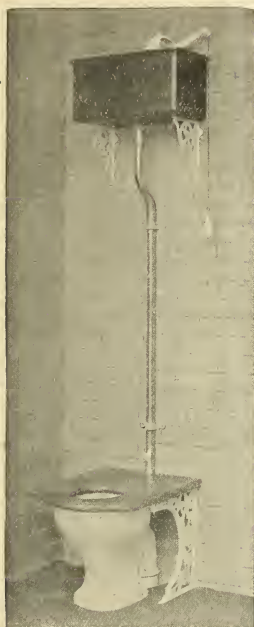
Doorway in Merrion Square

Later Georgian Doorways
in Dublin.



Doorway in Leeson St. Dublin.

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RESISTANCE OF PLASTERING TO FIRE.

Insurance Engineering offers a sort of challenge to the profession, in a recent issue, in speaking of the resistance of ordinary plastering to fires, by saying that it is surprising that our architects, to whom every one interested in building, whether owner, contractor, or material-man, looks for advice and wisdom, assuming that they have thoroughly investigated every meritorious improvement of this advancing twentieth century, should permit walls and ceilings to be covered with plaster, which, as the *Brick-builder* says, "generally falls off in the early stages of a fire." *Insurance Engineering* thinks apparently, that architects are culpably blind in not specifying, for their buildings, instead of ordinary plastering, some one of the proprietary plasters, which, as it has discovered, will resist, without crumbling, a temperature higher than that of melting copper. It is hardly necessary to say that, as usual in such cases, *Insurance Engineering* looks at the matter only from one point, forgetting that the architect has to consider his materials under a multitude of different relations.

with a large proportion of water, and, as a matter of fact, they often retain for a long time a dampness which delays the finishing of buildings in which they are used. A third reason why hard plasters are used by architects with discretion is that they are sometimes so acid as to affect iron exposed to them. Plaster-of-Paris itself is highly acid, and, if kept moist, will soon destroy, by corrosion, iron lathing covered with it. The proprietary hard plasters are less acid than pure plaster-of-Paris, and may be applied to metal lath, in a dry situation, with safety; but no architect would willingly risk exposing structural members, or costly wrought-iron ornamental work, to the action of mortar containing a large proportion of plaster-of-Paris, in a situation where it might frequently be wet, or even damp. If unskillfully used, or made, the plaster-of-Paris, or gypsum, mortars are subject to further troubles, in the way of swelling and cracking, want of adhesion of the different coats, and so on. It is, however, fair to makers of the best-known proprietary sorts to say that the materials supplied by them are so pre-



AN EXTRAORDINARY ACCIDENT!

Engine bursts through the walls of a Dublin Railway Station.

Any architect could have told *Insurance Engineering* that plaster-of-Paris, which is the basis of the so-called "hard plasters" used in building, resists crumbling from fire. The sight of the old-fashioned plaster cornices, made with gauged mortar, that is, with a mixture of plaster-of-Paris and lime, clinging, intact, to the brick walls on which they were run, after a fire which had stripped the ordinary lime plastering from the adjoining surfaces, is a familiar illustration of this fact; and if architects, knowing this, continue to specify lime plastering, the fair inference is, not that they are ignorant of the properties of the materials which they employ, but that they have reasons, apart from the fire-resisting quality, for using the lime. One of these reasons is the greater cost of the proprietary plasters, a cost which ought not to be incurred without the consent of the owner, and which the owner, very frequently, does not wish to incur. Another reason is the slow drying of the hard plasters, in comparison with lime plastering. Those who sell the hard plasters generally claim that they dry more quickly than lime-mortar, and they certainly harden more quickly; but, in hardening they combine

pared as to give very little trouble in this way, and are used to a large extent by architects, where, in their judgment, they are applicable; and, in our opinion, they might be still more used if those who sell them would modify their policy of accusing architects who use anything else, of ignorance and incompetence, and would, instead, listen occasionally to the suggestions of people who understand thoroughly the defects of ordinary materials, and, while they are ready to welcome any new material that they find to have good qualities, are not disposed to form their opinions at the dictation of patentees, or of the public.

—:—:—

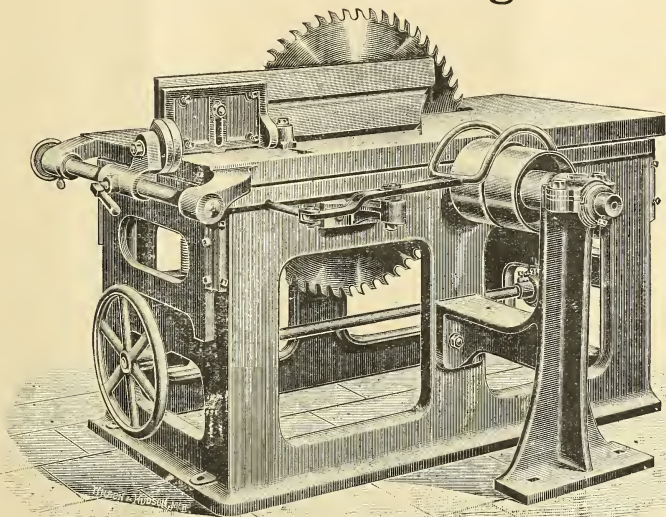
The Largest Cathedral Church in England is St. Paul's, in London. This cathedral was commenced by Christopher Wren, in 1675, and was finished in 1710. Its greatest external length is 510 feet, and its breadth, exclusive of the rounded apses at the north and south doorways, is 250 feet. The largest ordinary church is that situated on the high road between Camberwell and Peckham, and commonly known as St. Giles's, Camberwell. Mr. Spurgeon's chapel at Newington, Butts, commonly known as the "Metropolitan Tabernacle," is a huge building, and is capable of accommodating five thousand persons.

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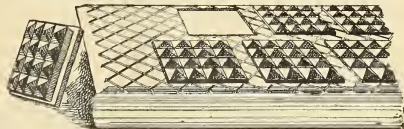
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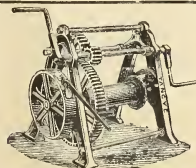
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A NEW IRISH INDUSTRY.

The new industry (as it may fairly be called) which has been established in the Lagan Vale is the manufacture of patent roofing materials, paper and fibre. One branch of it has been in existence for the last five or six years; the other has only just been started. The industry was founded, and is carried on by the Patent Vulcanite Roofing and Asphalte Company, Limited, Belfast.

This roofing material is a German speciality, though not a new one, for it has been largely used on the Continent for the last sixty years. It has been patented in eight countries, and has received, among other rewards, about fifty gold medals. It is a compound of fibre and asphalte prepared by a special process, and is known as Hænsler's patent vulcanite. The city of Cologne may be said to be roofed with it, and in many other German towns it is the material mostly employed for roofs of every kind of building.

But we at home have been accustomed to look with some suspicion upon German methods and German specialities. Our business shrewdness has always had a touch of conservatism where Germany was involved. However meekly we might accept the lead of the Fatherland in metaphysics, strategy, and the higher criticism, we do not care to acknowledge it in such arts as building construction and the production of building material. We consider ourselves able to give our Teutonic friends points in these matters.

When Mr. G. F. Beer—himself a German—obtained the patent rights for the United Kingdom about six years ago he entered into partnership with Mr. Glendenning in Belfast, and commenced the manufacture of the vulcanite roofing upon a small scale. But it was no easy matter to overcome prepossessions in favour of slates and tiles and lead. It was harder still to remove prejudices against anything of German origin. Municipal authorities, borough surveyors, and fire insurance agents opposed the newly-introduced material as unsafe and unsuitable.

Then, again, vulcanite was only adaptable to a flat roof. And, while several conventional architects objected to such an innovation in style, even the more progressive among professional men deemed lead and concrete the only materials safely applicable to a flat roof on a permanent building. So the firm had what the Yankees call "a hard row to hoe" in putting their speciality upon the market. But they took up the task with a dogged determination to see it through.

The most serious objection the new roofing had to encounter was that it would be dangerous in case of a fire. Most people readily admitted that it was all right as regards its waterproof qualities, but, it being a bituminous compound, they doubted its fire-resisting capacity. The firm met this objection frankly and fairly by a test, the thoroughness of which could hardly be disputed. Two buildings were erected—one with vulcanite, the other with an ordinary slated roof. They were exactly alike in other respects. Both were set on fire simultaneously, and, under the direction of the Wolverhampton Fire Brigade, both were kept burning for an hour and a half. The result was that the slate roof was completely burned out, while the vulcanite roof was practically uninjured. That settled the matter once for all as far as fact went.

But there was still the law to be satisfied, and in time the Court of Queen's Bench in London did that. The question whether vulcanite roofing was incombustible within the meaning of a Corporation bye-law was tried by the above Court, and, after hearing a mass of evidence to show that this material was more fire-resisting than either slates or metal, the Court gave judgment in its favour, establishing the reputation of vulcanite legally, just as it had already been established morally by the Wolverhampton test.

For mills and factories its special suitability has been recognised by the leading architects, and in the cotton-manufacturing districts of Lancashire it has been extensively employed. Recently the company dealt with an order to cover some huge mills at Oldham requiring 10,000 square

yards of material, representing a value of about £2,000. All large buildings, however, in which the architectural design admits of flat roofs can be covered with vulcanite, and for roof gardens (which during recent years have come much into vogue) it is the very thing, because, once laid down, no further interference is required, and it will last a lifetime without repair. To damp it is absolutely impervious, as may be gathered from the fact that at the factory in Lagan Vale there is a tank on the roof which holds fifty tons of water, and which is lined only with vulcanite, not an ounce of lead or concrete being used.

In Belfast a good many buildings have been roofed with the material, including the Mater Infirmorum Hospital, Messrs. Strain and Sons, and Messrs. Carswell's warehouses; several large factories, and hotels, shops, and private dwelling-houses in various parts of the city and suburbs. Wherever used it appears, judging by the testimonials in its favour emanating from all parts, to have given great satisfaction.

With the demand for the patent roofing rapidly growing, the factory at Lagan Vale has to deal with a heavily-increased output, and substantial additions to premises and plant have become necessary. Started five or six years ago as a private firm, the concern has now become a limited company. For the last three years it has had a department in London managed by Mr. Beer, Mr. R. Glendenning having control of the Belfast works. The Company is about to establish two more branches in England, where, naturally, a vast amount of its trade lies, but the producing centre, it is gratifying to know, will still be Belfast.

There are two factories belonging to the Company in Lagan Vale. One is a feeder to the other, but is still, to some extent, a separate concern. The vulcanite factory was founded five years ago, but has been added to from time to time. At present it has a frontage of 230 feet to the river, and a depth of 346 feet. It is substantially built of red brick, the contractors being Messrs. M'Loughlin and Harvey. A new set of boilers and engines is at present being erected to drive more powerful machinery than that hitherto used for the manufacture of the vulcanite and other specialities of the Company. These other specialities consist of a material known as "vulcanite-asphalte" (which is a covering for workshops, sheds, and other buildings with sloping roofs upon which vulcanite could not be laid), and a material for use as a "damp course" on buildings.

It is claimed that the vulcanite asphalte only requires coating with varnish once every five years or so, instead of every year as with ordinary asphalte roofing, to which it is in every way superior.

As for the "damp course" material, several advantages are claimed for it over the older kinds. These latter, it is stated, are only made in short lengths of 32 inches, thus necessitating a great number of joints. The Company constructs its "patent damp course material" in 40-ft. lengths, and, in addition to the greater convenience thus obtained, it is claimed that the material is unsurpassed for quality and effectiveness.

The process of manufacture involves the use of very powerful and costly machinery, and the fine plant already put down has cost many thousands of pounds. The Company, however, contemplates doubling the existing plant very soon, and making a special branch of the manufacture of special kinds of paper and carpet felts, in addition to feeding the sister factory.

The paper-making is exceedingly interesting. If the intelligent schoolboy of to-day were asked what paper is made from, he would say, "wood," just as confidently as his prototype of thirty years ago would have said, "rags." But, strange to say, this paper is really made from rags. The work of preparation is executed in the upper part of the factory. Afterwards the pulp, mixed with some chemical ingredients—the nature of which is probably a trade secret—is delivered automatically to the paper-making machine—a magnificent appliance, extending almost the entire depth of the factory on the ground floor.

It is, indeed, a wonderful apparatus, entirely automatic, and working with beautiful precision. Following its course along the machine, you can watch the gradual transformation

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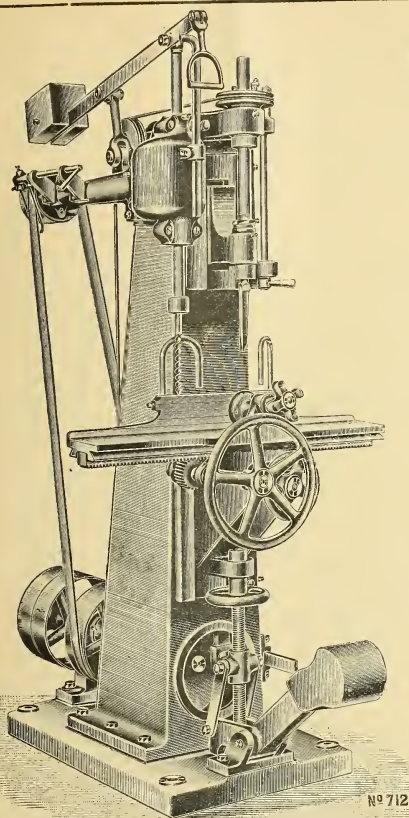
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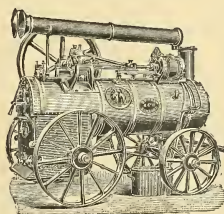
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of the pulp into paper, and see how, when the sheets are formed, they are dried by passing around hot cylinders. If you choose you may receive a smart electric shock from the roll at the finishing end, for the newly-made paper contains a large amount of electricity. There are also on the ground floor ingenious machines for cutting the paper, etc.

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BREVITIES.

Lead Lights in Stonework.—Iron frames are not required. A groove is worked in both mullions, and the lead glazing pushed in on one side first and then in the other, by iron sledge bars, and cemented on both sides.

A Test for Sewer or Drain Pipes.—A suspected joint in a sewer or drain pipe may be tested by wrapping it with a single layer of white muslin, moistened with a solution of acetate of lead. As the gas escapes through the meshes of the clot, it will be blackened by the sulphur compound.

Neat Portland Cement Cracking.—When neat Portland cement is used in thin layers that are exposed to the air, it cracks and breaks off. Thus it is unfitted for skimming walls or floors, or for pointing brickwork, and in such cases should be mixed with sand in the proportion of one of cement to one of sand, or two of cement to one of sand. Cement may be used neat for jointing drain pipes when the drains are to be filled in quickly, but in most cases the question of expense will prevent neat cement being used for this purpose. The cause of the cracking, and of the brittleness, is attributed to unequal shrinking. Where the cement will not be exposed to air, as in the interior of brickwork, it may be used neat if necessary.

Cleaning Mosaic Floors.—For cleaning tile mosaic floors, use muriatic acid (spirits of salts) diluted with water (the requisite strength may be found by trial), well scrubbing the floor with an old brush, and washing off with clean water. This is generally effectual. For marble mosaic floors, use a bleach consisting of, say, 7lb. of American potash dissolved in a pailful of water, and made into a paste by adding whiting, or, better still, newly slaked lime. Apply this like whitewash, with an old brush to the floor. Let it remain on for a day or two, and then wash off with clean water.

The way the air in the House of Commons is purified is not a little interesting. It comes in upon the floor, which is made of lattice work, and passing upwards, escapes by a ventilating apparatus which the gas-lit roof is cleverly made to assist. Amongst the various devices for purifying the air is a series of thick layers of cotton wool, through which it is driven. Persons who must needs breathe the ordinary London atmosphere regard with melancholy wonder the black deposits with which the layers of wool are steeped. In ordinary circumstances this stuff must needs be swallowed.

Rough casting.—In rough casting, the wall is first plastered over with lime and hair mortar, having, for the best class of work, some cement added to improve it. After this has set, a second coat of mortar, mixed so as to be fat, is spread as evenly as possible over the last coat, and while this is quite soft, the stones to be used are dashed forcibly against the work, to which they adhere. Care should be taken to see that the sand and stones or pebbles used are free from dirt, and if any clay is found mixed with the sand, it will require washing. The stones should be screened, so that they will be of about the same size. Sometimes a coat of lime-white, and sometimes ochre is used for colouring the roughcast.

Street Paving Experience in Sheffield.—At a meeting held at Sheffield on the occasion of the first visit of the members of the Incorporated Association of Municipal and County Engineers to the city, the City Surveyor (Mr. C. F. Wike) said that the gradients of Sheffield, while favourable for purposes of drainage, made the question of a suitable form of paving a most difficult one, and there was a great variety of pavements in the city, as the following table shows:—Wood, nearly three miles, about two miles of which had been laid since January, 1898; granite, 21½ miles; Inverkeithing, 1½ miles; gritstone, 21½ miles; boulders (a local name for small, rough setts), 47½ miles; tar macadam, 7½ miles; dry macadam, 212 miles; a total of 314½ miles. The proportion of macadam, unfortunately for the district rate, ranked high. Many streets had gradients of one in ten, one in eight, and even one in five, and when there was a heavy rainfall the macadam could not remain upon the surface of such streets, but was washed either upon the low-lying roads or into the sewers, from which it had eventually to be removed at great cost. About 300,000 tons of macadam had been used in Sheffield during the last ten years. Trial lengths of the different pavements laid had been carefully watched, and the figures so obtained were as follows:—Life in streets of heavy traffic: granite, average, at least, twenty-one years; (wood red), average about seven or eight years; gritstone, rarely more than five years or six years in main streets; tar macadam, in busy suburban road, more than four years; dry macadam, entirely according to traffic and other conditions. Where wood was laid against tram rails, the life was very uncertain. Pavement of this class laid in Sheffield within the last nine months was already grooving, as well as gritstone and Inverkeithing laid about the same time. With regard to gritstone, which was practically a local stone, numerous experiments had been tried with a view to prolonging its life under heavy traffic. Concrete foundations had been used, but these had proved a failure. In one main street, paving of this kind laid on concrete was thoroughly worn out in three years and a half. In another street, forming part of a tram route, 7-in. Lancashire setts had been laid on concrete, and the result was being closely observed. So far, the most satisfactory foundation for gritstone seemed to be hand-pitched rubble, with a bedding of hard chips. Within the last few years, a whinstone from the Inverkeithing quarries had been introduced into Sheffield, and had found favour on account of its quietness and non-slipperiness. It, however, wears very rapidly, especially under traction engine traffic, or along tram-lines. In one case, where it was laid under the latter condition, it wore ½ in. below the level of the rails in less than twelve months. The paving immediately abutting upon the rails was then taken up, and relaid with a hit-and-miss course of granite setts next to each rail, to equalise the wear a little. It is now less than two years since the relaying, but the Inverkeithing is from 1½ in. to 2 in. below the level of the granite, and will soon need to be taken up. Mr. Wike said that his experience tended strongly to prove that no material would stand next to tram-lines but granite, and even that, after a time, became grooved.

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SPECIFICATION.

The Alexandra Nurses Home, Curragh Camp.

CARPENTER AND JOINER.

(Continued.)

The back to be $\frac{3}{4}$ in., rebated and V-jointed in narrow widths. The front to be 1 $\frac{1}{2}$ in. framing, 3 in. wide, grooved and tongued to sides, and to have 1 $\frac{1}{2}$ in. doors hung folding, each fold framed in one panel, square and flat, and moulded on outside, hung with 1 $\frac{1}{2}$ pairs of 2 $\frac{1}{2}$ -in. brass butts. The doors to be secured with two 3 $\frac{1}{2}$ in. brass flat spring bolts, large brass cupboard turn, with 1 $\frac{1}{2}$ in. knob, and a 4 in. brass lever cupboard lock.

The top of the cupboard to project 1 $\frac{1}{2}$ in. over sides and front, and to have $\frac{3}{4}$ in. x 2 $\frac{1}{2}$ in. moulding fixed underneath to form cornice, mitred at angles and returned at ends.

The skirting to be $\frac{3}{4}$ in. moulded, 4 $\frac{1}{2}$ in. high, mitred at angles and returned at ends.

The whole to be properly wrought and put together.

A pin rail, $\frac{3}{4}$ in. x 4 in., moulded on edges, to be fixed to back of each wardrobe, fitted with No. 4 brass hat and cloak hooks.

Landing.

A similar cupboard to the last described to be provided where shown on landing, but to have three additional shelves for linen, and the pin rail and hooks to be omitted.

Provide Holland blind and mountings to window, as before described.

Bathroom.

Provide and fix a 5 ft. 6 in. cast-iron white enamelled bath, with 2 in. rolled edge and $\frac{3}{4}$ in. brass screw-down, hot and cold water, bib taps, washer and waste complete, of the P.C., value of £5 10s.

Provide and fix deal pin rail, 1 in. x 4 in., and two feet long, moulded on edges, plugged to wall, and fitted with No. 2 brass hat and cloak hooks.

Lavatory.

Provide and fix on galvanised cast iron brackets a 1 in. polished white marble lavatory bench, 3ft. 6 in. x 1ft. 6 in., with sunk and grooved soap dish, and fitted with 14 in. white enamelled basin with overflow and brass plug and chain, of the P. C. value of 35s., and 1 $\frac{1}{2}$ -in. marble skirting, 4 $\frac{1}{2}$ in. high, at back and ends, with O.G. shaped ends.

Provide and fix pedestal closet with flushing tank, 1 $\frac{1}{2}$ in. lead service and mahogany polished seat, complete, of approved pattern.

The closet for servant in yard to be similar, but to have deal seat.

SMITH AND FOUNDER.

The cast-iron to be of good tough No. 2 iron, free from air and sand holes, cinders, or other defects, and all the parts to be cast perfect, and to be subject to such tests as may be directed by the Architect.

The smith's work to be forged clean from the anvil, and neatly, soundly, and perfectly finished.

The rolled steel joists to be of home manufacture and of stock sections.

All moulds and patterns to be in strict accordance with the drawings, and to be submitted for approval before being used.

Chimney Bars.

To be 2 in. x $\frac{1}{2}$ in., ends split and turned up and down, and to be 12 in. longer than the opening in each case.

Cast Iron Shoes and Holdfasts to Door Frames.

To be as described with door frames, in carpenter.

Eaves Gutter.

The main roof to have 6 in. cast iron moulded eaves gutter, weighing 26 lbs. per 6 foot length, the bay window and porch to have 5-in. gutter weighing 20 lbs. per length, and the water closet in yard to have 3 $\frac{1}{2}$ in. gutter weighing 14 $\frac{1}{2}$ lbs. per length.

The gutters to have all necessary stopped ends, returned moulded ends, internal and external angles, and outlets. The outlets to be protected by galvanised cast iron gratings.

The gutters to main roof to have 3 in. cast iron rain water pipe, weighing 24 lbs. per 6 foot length, and the other gutters to have 2 $\frac{1}{2}$ in. pipes weighing 21 lbs. per length.

All rain water pipes to have ears cast on, and to be fixed with nails passing through a $\frac{3}{4}$ in. gas socket, so as to block out the pipes from the walls.

The pipes to have all necessary swan necks, plinth bends, shoes, and hopper heads where shown.

All joints to pipes and gutters to be made perfect in red lead, and the gutters to be drilled and fixed to fascia board with 1 $\frac{1}{2}$ in. stout screws, No 3 to each 6 foot length.

Waste from Bath and Lavatory on 1st Floor. The waste from bath and lavatory to empty into hopper head, and to have 2 $\frac{1}{2}$ in. pipe similar to rain water pipe, and with shoe to discharge over gutter.

Rollled Steel Joists. Provide and fix to carry front wall over inner door of porch and bay window, and wall plate of roof over landing, R.S. joists, 6 in. x 4 in., weighing 20 lbs. per foot, drilled for bolts and screws as required.

Range in Kitchen.

Provide 4-foot close range, with copper boot boiler to supply cylinder for bath, etc., of the P.C. value of £10 0s. 0d., and of approved make.

Grates in Sitting and Waiting Rooms.

To be 36-in. tile grates, with cast iron mantels and tile hearths, each of the P.C. value £3, and of approved pattern, with tile hearth complete.

Bedrooms.

To have mantel and register combined for 2 feet opening, with tile hearths, complete, of the P.C. value of 30s. each, and of approved pattern.

SLATER.

Roof. The main roof to be covered with best Bangor Countess slates, having a lap of 3 $\frac{1}{2}$ in., nailed boarding, with two composition nails to each slate, weighing 1 lb. to the 100.

The eaves to have a double course, and the valleys to be truly cut.

Ridge.

To be of red ornamental tiles of approved pattern, set and pointed in Portland cement.

Verges.

To be finished with Portland cement, and a cement fillet to be run against wall and under projecting verge.

Slate Slab Shelves.

Provide slate shelves for larder, as described in fittings clause.

PLASTERER.**Line and Sand.**

To be described in Bricklayer.

Laths.

To be lath and a half, of the best description of memel new lath wood, free from sap and other defects. The laths to be fixed not less than $\frac{1}{4}$ in. apart, in even courses, with cast-iron nails 7-8 in. long and so break joint every three feet; the head of each lath is to be nailed separately and not to over-lap.

Hair Mortar.

The hair mortar is to be composed of equal portions of lime and sand, and 1 lb. of well beaten dry, long and sound bullock's hair, to each three cubic feet of mortar.

The whole to be mixed until thoroughly incorporated.

Putty.

The lime for putty and fine stuff is to be run in the usual way through a fine sieve into a proper receptacle, where it is to remain until of a proper consistency for use.

Examination of Work.

All work embracing more than one operation shall be subject to examination and approval at each stage.

Render, Float, and Set.

Render, float, and set with fine stuff the walls of sitting and waiting rooms, porch, hall, and staircase, back passage, and pantry, bedrooms, bathroom, lavatory, and water closet.

Cement Angles.

All external angles to plastered walls, chimney breasts, etc., to have Portland cement angles, 6 in. girth, finished in Parisian Cement.

Cement Skirting. The concrete and tiled floors to be finished with Portland cement skirting, that in back passage, pantry, and larder, to be 6 in. high and chamfered, and that in porch 9 in. high, moulded and finished in Parisian cement.

THE IRISH BUILDER

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, SANITATION,

ARTS AND HANDICRAFTS.

Every Second Thursday.

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AUGUST 29, 1901.

11 LOWER SACKVILLE ST.
DUBLIN.

Price 1d.

TOPICAL TOUCHES.

ARCHITECT (examining the newly laid foundation)—“How’s this? Your foundation is only half the size my plans call for!”
EXPERIENCED BUILDER—“The owner told me to keep the cost within your estimate.”

The Bermondsey Guardians at their meeting last week, decided to erect cottage homes for the poor children of Bermondsey, at a cost of £148,000. This sum is to be borrowed; £132,000 will be repaid within a period of 30 years, and £16,000 within a period of 15 years.

The Emperor William has designed a magnificent centre-piece epergne, which is a present from “Emperor William II. to King Edward VII.” It is stated that no such exquisite and artistic workmanship has been seen in Berlin since the eighteenth century.

Mr. Hall Caine, the well-known novelist, author of “The Christian,” “The Manxman,” etc., who is about to publish a record edition of 100,000 copies of his latest work now in the press, like Mr. Thomas Hardy, Mr. Albert Chevalier, and many other well-known men, began life as an architect.

We have lately received a specimen copy of the *Architectural Review*. This splendidly produced magazine has attained so firm a hold in the affections of architects and all who are interested in matters of art, that the old saying, “Good wine needs no bush,” covers all we have to say of it. The articles are well written, plentifully illustrated, and the price is now reduced to the modest 6d. A very ingenious and economical system of insurance is worked in connection with the *Review*.

We are glad to note from the official weekly return sent us by the Registrar-General that Dublin is at present in an exceptionally healthy condition, the death-rate for the Dublin Registration area for the week ending the 17th August being only 23·3 per thousand. Of course, that is much higher than we should wish to see it, but the average for the four weeks ending the same date was only 19·2. Most of the Irish towns for the same period show exceptionally low averages. The death-rate of St. Petersburg has lately reached 40·0 per thousand of the inhabitants. Dublin has now to take a back seat!

Mr. Charles Abbey, a widely-known architectural sculptor, died at his residence in Rosemont-road, Richmond, near London, upon the 21st inst., and was buried at Richmond Cemetery upon the 28th inst. He was 65 years old at the time of his decease, and leaves a widow and several married daughters. A particularly skilful workman, and of genial disposition, he was widely popular, especially with the last generation of stone carvers. Nearly 40 years ago he was a resident of Dublin, and for a long time carried on a successful business in partnership with Mr. Charles W. Harrison, at present the senior member of the much respected firm of Messrs. C. W. Harrison and Sons, the present monumental and architectural sculptors of Great Brunswick-street, Dublin.

Everything points to the view that next year’s Cork Exhibition will be a big success. A Ladies’ Committee was formed in Cork the other day to aid in furthering the scheme, while advantage will be taken of the great annual gathering in Dublin for the Horse Show to hold a meeting of representative Irishmen willing to aid in helping on the good work.

The *Evening Post*, of New York, states that “a New York company is to make the electrical machinery for three elevators for Buckingham Palace. Americans will also go to instal the car, cabinet work, and fittings, which will be the products of English workshops.”

The building trade in Dublin cannot, on the whole, be said to be very brisk, though most of the larger builders are kept exceptionally busy. Most of the architects, with the exception of a favoured few, own to slackness of work. The firms in the timber and joinery trades are particularly well supplied with orders at present.

In connection with the new Birmingham University buildings, great dissatisfaction exists locally because the responsible authorities have entrusted the work to Mr. Aston Webb, instead of having a public competition, and thus giving local men a chance of winning the competition. It is argued by many of the subscribers that the procedure is lacking in enterprise, and in consideration for the local men, and that Mr. Webb, with the enormous amount of work which he has in hands, can hardly give great personal attention to the enterprise.

The *Sphere* gives an illustration of the simple yet striking memorial recently erected to the late Lord Russell of Killowen, in Epsom Cemetery. It consists of a massive granite enclosure, 27 feet by 20 feet, and about 4 or 5 feet high. The pillars at the corners, centres, and sides weigh about a ton each, and are adorned by a band of carved Runic work. In the centre is a simple mound marking the grave of the late Lord Chief Justice. “The granite came from an Irish quarry, it was erected by Irish workmen, and in its massiveness and solidity is characteristic of the great Irishman whom it commemorates.”

Professor Warren, an eminent Bostonian, speaking of latter-day architecture in New York, says: “In New York the influence of the Ecole des Beaux-Arts is paramount in much of the work, often even to the sacrifice, if not of local, of national character, so that many buildings look as if they had strayed from the Boulevards of Paris. Though we may regret this wholesale importation, this direct imitation, with all its mannerisms, of a style which is full of bad taste and solecism, in spite of the strength in plan and mass of its originators, it does seem to express New York, and it certainly has been acclimatised there, and is affecting nearly all the work, while it has received but little welcome in other parts of the country, so that this direct Parisian influence has come to be peculiarly characteristic of New York, and may possibly be the starting point of a local manner of building. Lavish display, richness of effect, characterise most of the work, and express the luxury-loving New Yorker.”



Ardee.—The R.D.C. have received representations to build 57 cottages.

Arklow.—ARKLOW HARBOUR COMMISSIONERS. —Tenders were, on the 25th ult., invited for piling and repairing with concrete, 138 feet of the South Breakwater Quay Wall, in accordance with plan and specification, which could be seen on application to the Harbour Master, Arklow, or to Mr. John Pansing, C.E., Wicklow. Parties tendering stated separately the rate per lineal yard of quay at which they were prepared to execute the piling and concrete work, and also the removal of the boulders.

Ardee.—TENDERS FOR LABOURERS' COTTAGES.—Mr. John Halpenny, of Ardee, tendered to build cottages at Piercetown and Greenan, at £145 each. Mr. Daniel Clarke, of Ardee, to build the cottage at Piercetown, at £143 10s.

Belfast.—Messrs. J. and R. Thompson have secured the contract for the extension of the mart, and also stabling, &c., at Cormac-square, and Ferner-street, Belfast, for Messrs. Lennon Bros. Mr. W. J. Moore is the architect, and the contract price is close on £7,000.

Ballymena.—Mr. Boyd, C.E., Ballymena, is the architect for a new doctor's residence. The L.G.B. have approved the plans, but require (separate) sanitary accommodation to be provided for patients attending the dispensary.

Baileborough.—A number of representations for labourers' cottages have been received.

Camolin Dispensary Buildings.—A communication was received from the Commissioners of Public Works stating that they had authorised the issue of an instalment of £200 of the loan for dispensary buildings at Camolin. As regards the drainage system, as explained by the contractor, the Board's officer considers that it would be safer to have two manholes on the long stretch of piping from the house to the main sewer, one at the fence next the public road with a "Broad's Trap" to it, and another midway between this and the house. This will entail some extra cost, but the Board think it well that the suggestion should be conveyed to the guardians.

Clonmel.—THE NEW BUILDING AT THE ASYLUM.—Dr. Harvey said Mr. Fuller, architect, Dublin, was in attendance to submit the sketch plans of the new buildings. It would be well if the committee made arrangements to get the money to do the work, as it would take some time to have all the preliminaries carried out. Mr. Fuller came before the committee and submitted the plans of the three blocks, which he considered would be built for the money the Board were inclined to expend on them. The plans were examined and approved of, and Mr. Webb gave notice of motion to have the necessary funds borrowed. Dr. Harvey stated that the necessary furniture would amount to from £6 to £8 per head for the hospital, and about £5 in the other part of the building. Mr. Fuller said it would be necessary to appoint a quantity surveyor, for the Builders' Association would not allow builders to tender unless there was a bill of quantities.

THE WORKHOUSE.—A letter was read from Mr. Hackett, County Surveyor, in which he suggested that the Quantities Surveyor should make out the bills of quantities on the revised plans. He suggested that he should be empowered to make arrangements with him at remuneration not exceeding £2 2s. per day. The Chairman thought they might adopt Mr. Hackett's suggestion. The estimated cost of Mr. Hackett's plans was £3 500. Mr. O'Neill: Does that include Mr. Hackett's fees. Clerk: No. His fees are 5 per cent on the cost of the work. The Clerk said the Quantities Surveyor's fees were 1½ per cent. on the

old estimate. It would amount to about £150. Count de la Poer: What did he do for that? The Chairman explained that he had to go through the whole thing, and make out the bills of quantities. No contractor would tender unless these bills of quantities were made out. Mr. Kennedy considered when the Quantities Surveyor was getting so much on the old plans he ought to do the revision of this gratis. The Chairman agreed with Mr. Kennedy, and said there was precedent in the case of the asylum, where the surveyor waived a claim for £500 when he was appointed on the new scheme. Mr. Hackett remarked that the fees for the surveyor on the first plans would be about £75. Mr. Hackett then submitted his revised plans, which included two external annexes, with drainage and water supply. He estimated the cost roughly at £3,500—drainage, £900; water supply, £1,100, and annexes, £1,400. Count de la Poer asked what would be the cost. Mr. Hackett said he could not give details unless he got some time. If the particulars were too numerous they should be made out by the Quantities Surveyors. He could not guarantee to give an exact estimate. Mr. O'Neill considered they should postpone the matter until they had some further information. The rate-payers in his division were speaking about the expenditure. They were going to expend about £30,000 at the asylum. The matter was adjourned for a week, Mr. Hackett stating he would make a rough estimate of a few particulars asked for.

Cashel—LABOURERS' COTTAGE PLANS.—The Local Government Board wrote with reference to the minute of the Council of the 25th ultimo, accepting tenders for the erection of one labourer's cottage on site No. 14 in Clonoulty East Electoral Division at £120, and another on site No. 20 in Clonoulty West Electoral Division, at £118, and they desire to call the attention of the Council to the minutes of the 13th of June last, from which it will be seen that tenders at lower prices have already been accepted for the erection of the cottages in question. Order—"Contractor had not his bonds signed in the first instance, and the Council had to re-advertise."—The same board acknowledged receipt of plans and specifications of the cottages proposed to be erected, stating that the plans comply with the requirements of the board.

Cashel, Connemara.—The Church of St. James, Cashel, Connemara, was recently dedicated. The building, the architect of which was Mr. T. J. Hamilton, of Galway, is capable of accommodating some 500 people. The High Altar is composed of marble and coloured Irish marble, with inlays of rich colouring. The bottom base is moulded, the centre panel under the altar table being carved in bold relief, the chalice, surrounded by vine and grapes, standing out conspicuously, with adoring angels on either side. It was designed by Mr. C. J. Taylor, C.E., architect, Dublin, the sculpture work being executed by Messrs. J. Taylor and Sons, Dublin.

Cahir.—A beautifully embossed brass tablet has been erected in Cahir Church in memory of the late Captain A. C. Goings, who was killed in action in South Africa. It is 6 feet long by 2½ feet wide. The border, which has been specially designed, consists of thistle and shamrock circularly intertwined, surmounted by palm branches, the whole surrounded by black marble. It bears the following inscription:—"Mors Janua Vitæ" [then the arms of the King's Own Scottish Borderers Regiment]. In loving memory of Alexander Charles Goings, Captain the King's Own Scottish Borderers, dearly-beloved son of Alexander and Wilhelmina Goings, of Altaville. Killed in action at Karee, South Africa, 20th March, 1900. Aged 33 years. His blameless life was crowned by a Christian soldier's death in the service of Queen and country. 'Blessed are the pure in heart, for they shall see God.' The memorial tablet is a very fine piece of artistic workmanship. It was executed by Messrs. Singer and Son, Frome, London.

Cork.—Some very rich and elaborate carved oak work, comprising choir stalls, pulpit, and Bishop's throne, is being prepared for Cork Cathedral, by Messrs. Sharp and Emery, of Dublin. The architect is Mr. S. Hynes, of Cork.

Dublin.—The erection of extensive new business premises for Messrs. Drummond and Son has been begun in Dawson-street. Mr. Albert E. Murray, A.R.H.A., is the architect, and Messrs. H. and J. Martin are the contractors.

THE ADDITIONS TO THE NATIONAL GALLERY.—The work of building an addition to the National Gallery in Leinster Lawn, which was commenced in January, 1900, is fast drawing to a close, and it is now possible to gather an idea of what an important addition this handsome building will be to Dublin architecture. The building is designed to meet the growing requirements of the Gallery, and when completed, will be as well found and fitted as any similar institution in the Three Kingdoms. It is an oblong structure with a frontage facing Leinster Lawn of 54 feet, and a depth towards Kildare-street of 230 feet, and consists of basement, ground, and first floors. The design, which is the work of Sir Thomas N. Deane and Son, is a handsome and imposing one, the front, which is particularly graceful and imposing, being in the style of the Italian Renaissance. The entrance is through a portico into a spacious hall on the ground floor, off which will be the approaches to the basement and first floors. The basement is wholly occupied by storerooms and the boiler room, from which the entire building will be heated on the radiating principle. The ground floor, which will be the main gallery of the new building, contains, besides lavatories and other necessary arrangements, seven large and beautifully designed rooms, each room being about 30 feet square, and lighted from the north and south sides by fourteen side windows, 10 feet by 14 feet, thus ensuring the best possible light. These rooms will contain the bulk of the Gallery exhibits, and the utmost care has been taken to have them, at the same time, convenient and handsome. The first floor, which will have an elevation of 22 feet, will also contain seven public rooms, besides the directors' apartments. Three of these rooms are being set apart for the Milltown collection, while, another is being specially fitted to contain the Milltown Library. The library room, when completed, will be the prettiest in the building, the panelling in plaster forming in itself a very considerable attraction. The other rooms will be devoted to the general purposes of the gallery. The first floor will be lit from the roof by large lantern lights nearly twenty-four feet square, and ensuring a magnificent light to this floor of the building. The whole structure is being erected in a tasteful and substantial manner, and reflects the utmost credit on the architects, Sir Thomas Newenham Deane and Son, and the contractors, Messrs. Michael Meade and Son. The building is fire-proof throughout, the flooring consisting of steel joists and breeze concrete, and being finished on the ground floor in teak parquet, and on the first floor in Riga oak and pitch pine. The roof is flat. Every particle of the work is being executed by Dublin workmen, and the supervision is also in local hands. The front elevation, and part of the side elevation are in Portland stone and Ballynocken granite from Osborne's quarries. The remaining stone work is Co. Dublin calp, from Messrs. Meade's own quarries. The window dressings are of Athy stock brick. The Portland stone work was executed in Messrs. Meade's shop, and reflects great credit on the skill of Dublin workmen. The woodwork throughout has been carried out in Messrs. Meade's own premises. The carving of which there are some beautiful specimens, is by Messrs. Harrison and Son, of Great Brunswick-street. As much as possible is being done to keep the new gallery in conformity with the old building, and in this way the main cornice of the new building is being made to conform with the cornice of the old gallery. All the rooms, with the exception of the Milltown Library, are being panelled in timber, with canvas covering to prevent any possible effect from damp. An open court has been left between the old gallery and the new to assist in retaining as much light as possible, and this side of the new building is being faced in enamelled brick, so as to assist in every way in giving this light. The whole building is a fine example of artistic taste, care, and skill. Every detail of the work is being carried out in the completest manner, and when it is thrown open to the public, which will be early in the coming year, Dublin will possess a gallery that can be pointed to with a fair share of

pride. The total cost of the building will be about £30,000, exclusive of any arrangements for furnishing; the architect, as before mentioned, being Sir Thomas Deane and Son; the Clerk of Works being Mr. Frank O'Hanlon.

Dundalk.—The Board of Guardians of this Union, at their meeting held at the Board-room of the Workhouse on the 12th August, considered tenders for the enlarging and improving of the Workhouse and Fever Hospital, in accordance with plans and specifications prepared by Mr. Peter Cahill, C.E., Dundalk. The tenders were opened, and were found to be as follows:—From P. Mathews and Keenan, at £787 10s.; from Nicholas Bennett, at £880; from James Wynne, at £960; from John McGuinness (accepted), at £810.

Drogheda.—Two tenders were received for building the addition to fever hospital according to plans and specification prepared by Mr. Turley, and that of Mr. Peter McCann, being the cheapest, was accepted.—The tender of Messrs. A. Davis and Co., was accepted for the supply of counterpanes.

On 20th August the Corporation dealt with tenders for 26 cottages, to be built in accordance with the plans and specification of the Borough Surveyor.

Dunmore, Waterford.—Dunmore East Church, Diocese of Waterford, was re-opened recently, after being closed nearly four months for restoration and rebuilding of the roof over the nave. The architect was Mr. Fogarty, of Limerick, and the builder Mr. G. Nolan, of Waterford.

Enniscorthy.—Mr. Nicholas Fortune, of Enniscorthy, is the contractor for the new post-office. Mr. T. J. Mellon, Office of Public Works, is the architect.

Fermoy.—Extensive additions to the R. C. Parish Church here will shortly be undertaken. Mr. S. Hynes, of Cork, is the architect.

Glengarriff.—Additions to "Eccles's" Hotel, so well known to tourists, will soon be started. Mr. Arthur Hill, M.A.B.E., of Cork, is the architect.

Lurgan.—On Sunday, 25th inst., the solemn dedication of St. Peter's Church, Lurgan, took place. It was hoped that the building of the new tower and spire would have been completed by that time, but though the work has been pushed on as rapidly as possible, it is not expected the task will have been completed before the 25th; however, the new bell will be in position for the occasion. The church was first opened for Divine service in June, 1897, but it was only recently that the building of the spire was commenced. It will rise to a height of 70 feet, and will do much to beautify the exterior of the sacred edifice, the architectural proportions of which are much admired by all who see it.

Louth.—An adjourned meeting of the Proposal Committee of the Louth County Council was held on the 21st August, at the Courthouse, Dundalk, for the purpose of receiving and deciding upon tenders for the following:—To repair Drogheda Courthouse in accordance with specifications prepared by the County Surveyor, Mr. P. J. Lynam.

Moir (County Down)—Representations under the Labourers' Acts will shortly come up for consideration.

Newry.—THE REBUILDING OF THE WORKHOUSE.—The Chairman asked was there any report from Mr. J. Brown, architect, recently?—Clerk: I had a letter from him asking that the plans should be returned. I immediately telegraphed to the Local Government Board and got back the plans, and sent them to Mr. Brown. Mr. Brown is now working away at the preparation of the estimate.

New Ross.—DISPENSARY AND COURTHOUSE BUILDINGS.—The Chairman of the Board of Guardians said it was about time that they followed up the decision already come to to build a new dispensary in the Arthurstown dispensary district.—Mr. Rossiter: Are you going to build a courthouse, dispensary, and doctor's residence together?—Mr. Ahearn: Certainly.—Chairman: No doctor's residence.—Mr. Cody: Only law and medicine.—Chairman: Well, then, you agree to advertise for a site in the vicinity of Ramsgrange.

Omagh.—A PUBLIC SLAUGHTER-HOUSE TO BE ERECTED.—In pursuance of notice, at the Omagh Council Mr. O'Connor

moved—"That steps be taken to provide a public slaughter-house within the urban district, and that the surveyor be directed to prepare plans and specifications for same."—Mr. Clements said of course he believed that it would be a great improvement to have a public slaughter-house, and not only that, but that there should be a refrigerator. It had come to the time when in a town like this there should be a refrigerator, which was, he might say, an adjunct to a public slaughter-house.—Mr. Daly suggested that the architect, Mr. L. J. Donnelly, Onagh, in drawing up the plans should leave room for a refrigerator, which would be nearly as useful and important to fowl dealers as to the butchers.—Mr. O'Connor said it was open to Mr. Donnelly to provide for that in the plans if he thought proper to do so.

ACCOMMODATION FOR EPILEPTICS.—A special meeting was held to consider the Local Government Board's circular letter of the 4th July last relating to the question of accommodation for sane epileptics at present inmates of workhouses in Ireland. The Board suggested that an institution might be established through the munificence of a private donor with the approval of Boards of Guardians. Marked "read."

Sier Kieran. In this remote parish of Ossory, on the slopes of the Slieve Bloom Mountains, in the King's Co., a new church to the memory of St. Kieran, "the first born of Irish saints," is in course of erection. For over a quarter of a century the work was in contemplation. The old church, built in the Penal days, before the close of the eighteenth century, was of rude design, cheerless, and uncomfortable. Two years ago, on the feast of the Dedication of the Churches of Ireland, the foundation stone was solemnly blessed and laid. The work, so auspiciously begun, progressed favourably since, and now, on the second anniversary of the opening day—on the 13th of October—the ceremony of solemn opening will take place. By that day the church will be complete in every detail. Arrangements have been made for the High Altar, Communion rail, lamp, etc. Though simple in design, and suited to the requirements of a country parish, it is admitted to be one of the prettiest of its class in Ireland. The boundary wall and entrance gates have also been erected. The High Altar is of Sicilian marble, with Caen stone reredos. The centre panel under the altar table gives a very perfect historical representation of St. Kieran, with the miraculous bell at his feet, preaching to his first converts, amongst them being the King of Ossory and O'Carroll, with their attendants. The artist has also introduced, with good effect, the Round Tower, the Wolf Dog, Holy Well, etc. The townland, in which St. Kieran's bell first sounded, is known as Bell Hill, and on its summit is a whitethorn, which tradition states points out the exact spot where the bell first rang; and now, on the brow of this remarkable hill, the new church is built, and an altar erected, the centre panel of which gives an historical representation of the principal facts connected with its history. St. Kieran is stated to have celebrated Mass on the same spot over fifteen hundred years ago. The architect for the new church was Mr. W. H. Byrne, of Dublin.

Sligo.—**THE ASYLUM.**—It was agreed to adopt the recommendation of the Building Committee, that the proposed site of the Protestant Chapel be altered to the south-west portion of the Asylum buildings.—It was also decided, after some discussion, to ask for fresh tenders for the erection of the Roman Catholic Chapel, work on which has been stopped for some time past. The tenders will not be considered until the meeting, two months from date.—The Surveyor to the Asylum, Mr. D. W. Morris, of Dublin, is at present engaged on the spot in extensive measurement of works connected with the recently finished contract.—The Board of Guardians will, at their meeting to be held on Saturday, 14th inst., receive and consider tenders for a new steam boiler, similar to the one at present in use. Particulars as to size and dimensions can be had on application.—The Guardians will also receive tenders, on same date, for old boiler in Workhouse. Mr. Thomas J. McGoldrick is the Clerk of the Union.



Annalong (Co. Down).—The County Council of the County of Down invite tenders for the improvement of Annalong Harbour, County of Down, in accordance with plans and specifications, which can be inspected at the office of the County Surveyor, Courthouse, Downpatrick, County Down. Tenders must be made on a form, a copy of which, with copy of the specification, may be obtained upon payment of £1 is., which will be returned in any case the Council consider a *bona-fide* tender has been sent in. Sealed tenders, endorsed, "Tender for Annalong Harbour," addressed to the Chairman of the Proposal Committee of the County Council, must be delivered at or before 11 o'clock a.m., on Saturday, the 10th October next. Mr. Robert MacIlwaine, Downpatrick, is the secretary to the County Council.

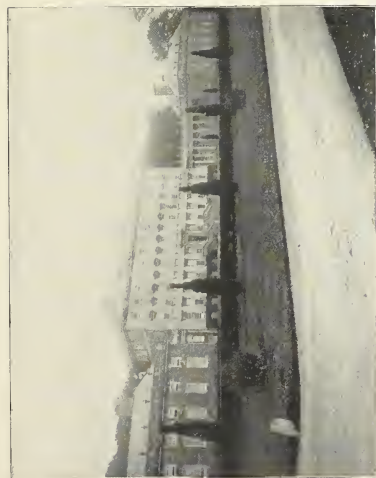
Ballyshannon.—At the weekly meeting of the Ballyshannon R. D. C. (County Donegal), in reference to the main drainage of Bundoran, the clerk said that after the Council rose that day week, he had received a further communication from Mr. J. Steadman, C.E., suggesting an alternative scheme for the output on the septic system, but, as this system was in the hands of a syndicate, he was unable to give the probable cost at present, as he was in communication with the managers of the syndicate. Mr. Steadman also asked the approximate population of Bundoran in winter and summer, and he (the clerk) had given it at 800 in winter and 4,000 in summer. The consideration of the matter was held over until the report would be complete.—The above Council also met on Saturday week. Doctor Hamilton reported on the unsanitary state of two houses in the West Port, Ballyshannon, and the usual notices were ordered. Mr. J. Steadman, C.E., County Surveyor for Donegal, sent in his report on the sewerage of Bundoran, and a proposed main drainage scheme. It was agreed that the report be entered on the minutes for the opinion of the L.G.B.

Bray.—In the Chancery Division, Four Courts, Dublin, the case of Mr. Watson v. the Bray Urban District Council was heard. This was an application for an injunction on behalf of Mr. Edward Watson, who resides at 10 Duncairn-terrace, Bray, and who complains of a nuisance caused, as alleged, by offensive and pestilential smells and vapours arising from a certain cab-stand and other conveniences maintained by the defendants at Seymour-road, Bray, and for an interlocutory injunction against its continuance.

Dundalk.—The Board of Guardians of this Union, at their meeting held at the board-room of the Workhouse, on the 12th August, considered tenders for the building of an intercepting tank, two manholes, and other improvements in connection with the Workhouse sewer. For the improvement of the sewer—construction of intercepting tank, and other works—there was one tender from Frank Coyle, Park-street, at £35 10s. After some discussion, Mr. Kelly moved, and Mr. Moore seconded, that the tender be accepted.

Fermoy.—A Tralee engineer (whose name has not yet reached us) has been appointed to report upon and suggest a supplemental waterworks scheme. It is proposed to expend £6,500.

Greystones.—**GREYSTONES DRAINAGE.**—Mr. Carter Draper reported that he had been considering an arrangement for the disposal of the sewage from Greystones in con-



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THE ENTRANCE FRONT.



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THE STAIRCASE.

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nection with the proposed drainage, and he recommended that a septic tank and filters, similar in principle to those laid down on the Burnaby Estate, be constructed in the position shown on accompanying ordnance sheet, and the sewage of the entire town be conducted to this tank and filters. He proposed that the affluent from the filters be carried by an outfall pipe to a point on the foreshore, and that a considerable portion of the stream now flowing into and disappearing in the shingle beach at the old life-boat house be divided into this outfall pipe. The effluent would thus be discharged within the harbour on the south side of the north groin. It was ordered that a copy of the report be sent to each member of the Council, and the consideration of the matter was postponed till that day fortnight.

Roscommon.—It is proposed to undertake the construction of new waterworks for the town. The work is in three sections—viz., No. 1, works on site, reservoir, etc.; No. 2, supplying only cast-iron pipe mains; No. 3, supplying pumping machinery and street water fittings, which may be tendered for separately or together. Specifications and bill of quantities for each section may be had on application to Mr. C. Mulvany, M.I.C.E., Athlone, on payment of one pound sterling, which will be returned on receipt of a *bona-fide* tender. Sealed tenders, addressed to the Chairman of the District Council, must be delivered at Board-room Roscommon, at or before noon on Saturday, the 31st inst.

Berehaven.—An American syndicate propose to revive the idea of making Berehaven a port of call for Atlantic liners. Those who know the place well are confident the scheme is quite impracticable.

Kerry.—CASHEN FERRY. —The County Surveyor of County Kerry is prepared to receive tenders for the rebuilding of the Cashen Ferry Bridge (cast-iron screw piles and steel superstructure). Plans and specification can be seen at, or obtained from, his office, and a form of tender obtained on the payment of a fee of one guinea, which shall be returned on receipt of a *bona-fide* tender. Intending contractors must be prepared to enter into a bond with two solvent and sufficient securities for the full amount of the tender, plus one thousand pounds. Tenders, on the proper form, must be lodged at his office in a sealed envelope, endorsed "Cashen Ferry Bridge," not later than Saturday, the 7th of September, 1901. The lowest, or any, tender will not necessarily be accepted. Mr. Singleton Goodwin is the County Surveyor.

SAND BRICKS AND SAND STONES.

MANUFACTURED BY SCHWARZ'S PROCESS.

Quite recently these sand-stone bricks have been brought on the market to challenge ordinary clay bricks.

These sand-stone bricks are made of siliceous sand and lime. The process is specially valuable in localities where stone quarries or clay beds are scarce, and where, on the other hand, sand and lime are abundant. In this process, from start to finish, machinery alone is used, and the same ensures a perfect independence of atmospheric conditions, also the quickest delivery of the finished article.

The main factor in Schwarz's process consists in a vacuum heating and mixing machine. The sand is first introduced in measured quantities into the machine, which is heated by steam at a constant temperature; thus any moisture in the sand is evaporated, and is, besides, removed from the mixing machine by means of a vacuum pump attached thereto.

Subsequently, powdered quicklime is added in a ratio of from two to six per cent., measured exactly, according to the sort of sand employed. The quicklime slackens so actively that all remaining moisture disappears in a very short time.

A measured quantity of water is then added to the dried mixture of lime and sand, and, under the influence of the heating steam, a chemical combination of the silica and the lime, viz., the hardening begins in the warm mass. All

other chemical combinations, as, for instance, that of lime, with atmospheric carbonic acid gas, are absolutely avoided, for, as before described, the operation takes place in vacuum, thus totally preventing any exterior atmospheric conditions interfering with, or in any way modifying the process.

En resume the claims of this heated vacuum mixing machine are:—

1. By its use, bricks can be made every day of the year, equally in dry as in wet or cold weather.
 2. Its very principle of employing both heat and vacuum obtain the most perfect results regarding its outline.
 3. It is fitted and so regulated that with duly measured mixtures of lime and sand its average output, year in year out, is as absolutely homogeneous as human agency could ever cause an artificial stone to be.
- Upon leaving this machine, the mixture falls automatically carried on specially constructed trolleys into one or more hardening boilers, and, after from six to fifteen hours' time, the bricks can be withdrawn therefrom, quite ready for sale and use.

This process is also particularly suitable to the manufacture of artificial coloured stones.

All the operations being mechanical, great saving in manual labour is effected by this system.

According to the number of presses used, and in a day of eleven hours' work, anything between ten thousand and thirty thousand bricks can be produced.

The bricks produced resemble stone; their colour may vary according to the sort of sand employed in their manufacture; they can practically be made any colour; they do not readily absorb water; they resist also the action of acids; their shapes are very neat and regular; their surface extremely smooth, and their angles very neat. We understand further particulars concerning the process, description and cost of installations, etc., may be had from Mr. Schwarz's agent for Great Britain, Mr. W. R. B. Lockie, 17 South Castle-street, Liverpool.

—:O:—

SOME EXPERIMENTS MADE WITH EXPANDED METAL.

The slab was 12 ft. 6 in. × 11 ft. clear span, 5 in. thick, composed of four parts of fine clinker to one of Portland cement, with expanded metal embedded in the under surface. The expanded metal was 3 in. mesh, $\frac{1}{4}$ in. × $\frac{3}{16}$ in. strands, and was in four sheets which were laid on the temporary centering with a 12 in. lap, and the meshes over-lapping were clipped together with steel clips.

After the concrete was set and the centering removed, the expanded metal was completely hidden in the under side of the concrete.

The slab was allowed to remain for seven weeks, and was supported with a 3 in. bearing on its four sides on a timber sole plate.

The test was begun on May 22nd, 1900. Then as ballast was thrown upon the slab in quantities of a cubic yard at a time.

When the slab was loaded to 1 cwt. to the foot super., there was no deflection.

At $1\frac{1}{2}$ cwt. to the foot super., there was $\frac{1}{2}$ in. deflection in the centre.

At 2 cwt. to the foot super., there was $\frac{3}{4}$ in. deflection.

At $2\frac{1}{2}$ cwt. to the foot super., $\frac{7}{8}$ in. deflection.

At 3 cwt. per foot super., the test was adjourned for the day, with a deflection of $\frac{7}{8}$ in.

On May 24th the test was resumed, when the deflection was found to be $1\frac{1}{8}$ in.

At the load of $3\frac{1}{2}$ cwt. a slight crack was observed on the under side of the slab, radiating from one corner towards the centre.

At 4 cwt. to the foot super., there was a deflection of $1\frac{3}{8}$ in.

At $4\frac{1}{2}$ cwt. the slab showed a crack across the centre in the direction of the longest span.

The slab was ultimately loaded to 5 $\frac{1}{2}$ cwt. to the foot super., and bore this load for $1\frac{1}{2}$ hours, when it collapsed, the fractures occurring at each of the four corners,

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4s. per annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly forward renewals to 11 Lower Sackville Street, Dublin. Subscribers can also assist by mentioning the paper, especially when corresponding with advertisers, and bring it under the notice of friends likely to subscribe.

VOL. XLIII.

AUGUST 29, 1901.

No. 1000

The Irish Revival.

OF late we have been hearing a lot about the Irish revival—the Irish Renaissance, as more cultured and spiritual souls love to put it—revival of things artistic, things industrial. Meetings are held to promote Irish industries, technical education is talked big of, Pan-Celtic congresses are held to induce the study of the Irish language. Extended University Education, even, is invoked as a panacea for all Ireland's ills. Mr. George Moore tells us that all we need do is to set aside the effete, worn-out English language, revert to the ancient tongue of our Irish forefathers—or what is left of it—and all will be well with Ireland; let our young men and maidens compose mystic verses, savouring of Bhudism, and converse in what we have no manner of doubt is exuberantly Irish, such as would make one of "our old ancient" bards turn in his grave could he but hear it. And yet another school pins its faith to reform of dress—a uniform head-dress and flowing garments for the fair sex, and saffron kilts for the men, and there you are—there is Ireland regenerated! Our amusing contemporary, *The Leader*, weekly dons its motly garb—fool's cap and bells—lustily roars, and whacks its big drum with athletic vigour in the process of what its editor loves to call "flogging the reptile Press of Ireland." Others, again, of more practical mind, talk of helping Irish industry, by finding nothing that is English or foreign if it can by any manner of means be produced in the country.

All these things, no doubt, are conceived in the most admirable spirit and in the sincere hope of benefiting the country. Many, too, are, doubtless, excellent in themselves, but as well calculated to effect an industrial revival in Ireland as to stem the flowing tide in Kingstown Harbour with a halfpenny quill pen.

In the midst of so many dreams and rhapsodies a letter such as appears amongst our published correspondence in this issue throws a rude dash of cold water over us in our day dreams. It points to an admittedly dangerous and diseased state of things in commercial and industrial Ireland—a state of things all the more deadly and cancerous in that it is internal, and can only be cured from within. It is useless to talk of helping Irish industries by buying nothing that is not Irish. A few public-spirited people may clothe themselves from head to toe in Irish tweeds and boots, (the latter composed of Northamptonshire "uppers," put together in Ireland;) richer men may ordain that they will have nothing but Irish

work in their houses, schools, or chapels, all in the fond belief they are doing a patriotic service. But what shall all this avail? Won't the mass of people go on buying where they get the best value—nay, more, in the cheapest and nastiest market? The thing is self-evident.

Technical schools may be established in every village or centre; but, unless they are conducted on up-to-date, practical lines, they will be worse than useless—a waste of time. Irish of a sort may be learned in every town and village. It may be a fine patriotic sentiment and an excellent mental gymnastic, but it will not make Ireland prosperous. What we need is not only the development of existing industries, and more of them, but the inculcation of practical and business principles into the minds of the industrial or would-be industrial population. The material is there; it needs only the directing influence. Technical Education on broad, sound, and practical lines, can do much—Technical Education, with a training in the workshop such as will equip a man with the knowledge to do one thing well and workmanlike in the best manner of his day, together with the imparting of a strong, self-reliant feeling and stout competitive commercial spirit, which will teach Irishmen that to succeed they must possess the business aptitude to fight the foreigner with his own weapons, by producing as good work as he does for the same money; and not only that, but the business capacity to advertise the fact. Otherwise, so-called "Technical Education" will not only depopulate the legitimate workshops, but add to the vast army of underpaid clerks and other unskilled workers. One of the most useful classes, we imagine, that could be established in an Irish Technical School for boys would be a class of "Commercial Practice," where the pupils already possessing a general elementary education, and the elements of such essential subjects as book-keeping, commercial correspondence, etc., would be taught the theory and practice by which these things are applied, which would thoroughly teach them, for example, that it is an iniquity which any business man should be ashamed to allow a business letter to remain a single post unacknowledged. To this one little sin English and foreign firms owe many an order, for procrastination is, unhappily, a characteristic Irish failing.

Such permanent industries as we do possess (shipbuilding, brewing, and distilling almost exhaust the list) have thriven solely because they have fallen into the hands of big firms, of sufficient business capacity and experience to know that it is the day of small things which eventually tells in business. There is no earthly reason why every other industry in Ireland should not do likewise. For this reason we think any organisation which teaches Irish fishermen that there is a right and a wrong way of catching and curing fish, that a crop of potatoes may be saved by a spraying, or that there are right and wrong ways of doing all things, and which makes experienced instructors available for teaching, just as the Technical Education Board is now doing, does more to further Irish industrial regeneration in all its branches than all the foolish theorists who prate of supporting Irish Industries.

The Care and Maintenance of Our Public Buildings.

To say that a nation's architecture is its history written in stone seems like repeating a very common-place platitude, but its truth cannot be gainsaid, and in no country is it better exemplified than in our land. To begin with, we find the traces of a cultured civilisation in the ancient remains, while the whole troubled story of the Middle Ages is told in the few broken, ruinous fragments that remain to us of those truly "dark ages" in Ireland, a period which in other lands was full of light and beauty in architecture. Then in the fine series of public buildings in Dublin, which constitute the Irish renaissance of the 18th Century, the beautiful modelled plaster work of the old houses, and the fine furniture and the excellent craftsmanship in all branches of work during that time—surely they tell as plainly as inanimate things can tell, the story of that all too brief period of awakening and prosperity which then came to Ireland. Such ideas as these must cause us to value our buildings, and it seems a pity to many people that more is not made of the interiors of these fine structures. Those under Government control are given over to the care of the Board of Public Works, an excellent and useful body in its own

antedeluvian fashion, but which sees the limits of its duty by our historic buildings in simply keeping them in repair.

Buildings under Municipal or semi-private control, such as the Bank of Ireland and Trinity College, fare much the same; no thought of internal decorative effect is ever entertained. Of course it will be said that lack of money prohibits such ideas being realised. But surely a beginning might easily be made. A great and wealthy educational institution like the University of Dublin might easily set apart a moderate sum every year for the creation of one piece of good decorative work, a piece of fine mural painting, a good mosaic panel or the like. What might not be done even in ten years?

Then the great British Government. Surely it, too, might do something more for the encouragement of the Art life of the nation than the subsidising of an underground School of Art for the teaching of freehand drawing? And what of our Municipality—our Corporation of Dublin—which prides itself on its patriotism, and can expend millions on schemes of doubtful merit? Might not that fine City Hall be beautified by the work of many artists, just as the round hall of the Four Courts might be? And the wealthy banking companies, beginning with the Bank of Ireland, which has the stewardship of the old Parliament House. Our artists lack employment; there is no encouragement for young students to perfect themselves in their art—many, indeed, lack the means; and our National Academy of Painting is fast becoming a bye-word. Of course things are not much better in England. Still, England has reason to be proud of the frescoes of the Houses of Parliament, and many of the larger Municipalities have displayed enlightenment by their encouragement of art; for instance the Manchester Corporation. But in this respect we lag sadly behind almost all foreign countries.

If our young artists were to study and cultivate decorative art, and our public men were to support them, there would yet be hope for art and for artists in Ireland.

America on America's Competition.

The following is an American view of American competition in Europe, and its probable consequences:—

"It seems tolerably certain that prices of structural iron, as well as of glass, paints, and many other materials used in building, will be lower before many months, either through the reduction of duties on them, and the consequent admission of competing foreign goods to our markets, or by the imposition of prohibitory duties in foreign countries upon goods imported from the United States, with the result of throwing a large surplus of goods back on the home market. Independent of any theories as to whether it is desirable to continue longer the use of the public force to enable the manufacturers of protected materials to extort enormous profits from their helpless American customers, the simple fact that the exports of the United States are now about five hundred million dollars a year greater than the imports, or, in other words, that the English, French, Germans, and Italians, instead of exchanging on even terms their labour for ours, are obliged to raise on an average from twenty to thirty dollars a year per family, in cash, in addition to their labour, to buy from the Americans the flour and pork and cotton that they need for food and clothing, at the very time that American competition in manufactured goods is robbing them of the means of earning a living, is sufficient to make it tolerably certain that attempts at defensive retaliation will not be long delayed, unless they are forestalled by wisdom and moderation on the part of the Administration and of Congress. Fortunately, there are evidences that the country will not look in vain for this wisdom and moderation. The President, who possesses that rarest and greatest of all virtues in a person in high office, a willingness to appear inconsistent if he is satisfied that the public good will be promoted by a change in policy, is said to think that high protection has done its work, and that other considerations are now entitled to a hearing; while some of the best and ablest leaders of the Republican Party in Congress not only hold similar views, but are engaged in studying definite plans for the relief of American

consumers, as well as for averting the violent measures of self-defence which present conditions seem likely to force upon Europe. It seems to be agreed that, in any case, the first object of tariff modifications, either here or abroad, will be manufactured iron. Whether the next will be coal, glass, woollen manufactures, silks or other goods it is impossible to guess; but if the process of tariff revision is once begun, it is not likely to be soon terminated."

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'THE ARCHITECTURAL RECORD' (OF NEW YORK).

A monthly magazine, well and brightly written, and amply illustrated, *The Architectural Record*, is an American monthly devoted to architectural matter. The articles are chiefly of a critical character, and deal with their subject in a most exhaustive manner. The July number, which now reaches us, has several very interesting articles, the best of which is, we think, that on "Modern Architecture and Decoration in France," by Jean Schoffer. The article gives a capital *resumé* of some of the modern French decorative work, notably mural painting; as the French have long excelled in this branch of art, it is of the highest educational value as the criticism of a cultured modern French artist, and is worthy of the student's perusal. The whole tone of this magazine, in common with all kindred American publications, demonstrates the strong hold which the Ecole des Beaux Arts has upon modern America. Every display of feeling in American art shows this stronger and stronger, and it seems rather a pity that the old Colonial tradition in architecture stands in danger of becoming lost. The reticence and refinement in detail of the best English work is wholly lacking; the superior "setting" and artful surrounding of the French work, the more studied proportions and better massing of the great French buildings, wherein they so greatly excel contemporary English work, together with the abandoned lavishness of rich detail, seems to have completely captured and subjugated the modern American mind. On the other hand, in some of the smaller works, the country houses, English types are being somewhat aped, though it cannot be said very happily. The smaller domestic work of the best of the English architects of late years has developed so fine a type, so artistic a character—simple, reserved, and elegant—that, like all true artistic impulses, it is too delicate a plant to lend itself readily to successful copyism. In the current number there is also an interesting article showing the development of the New York apartment house, which has brought forth some fine developments of planning for narrow street frontages.

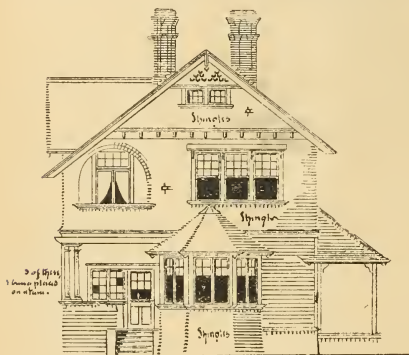
Water for Domestic Purposes.—The recent decision of Mr. Justice Buckley in what will henceforth be known as the *Barnard Castle* case has an important bearing on the charge for the supply of water. The question was raised whether the supply of water to a swimming-bath at a school could be considered as supply for domestic purposes, or whether the Local Authority were entitled to charge an extra sum for the amount of water so used. The decision of the Judge was that this water was used for domestic purposes. The decision seems to have a broader bearing than many other judgments, because it appears to enlarge the meaning of the phrase "domestic purposes." The decision of Mr. Justice Buckley was based on the reasoning that the swimming-bath was part of the domestic apparatus of the school; that the bath itself was not kept for the purposes of trade. There is, no doubt, a growing feeling in the community in favour of the largest and most unlimited and cheapest supply of water possible. Nothing is more paradoxical than that medical and sanitary experts should be continually preaching the need of cleanliness in habitations as a protection against disease, and yet that in this immense metropolis the cost of water should make its complete use almost a luxury.—*Builder*.

OUR ILLUSTRATIONS.

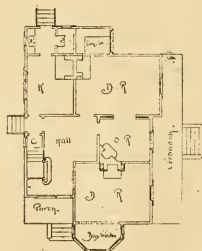
We continue in this issue two further views of Castletown, Co. Kildare, from photographs specially taken for us by Mr. T. E. Hudman, Architect.

A TYPICAL CANADIAN FRAMED HOUSE.

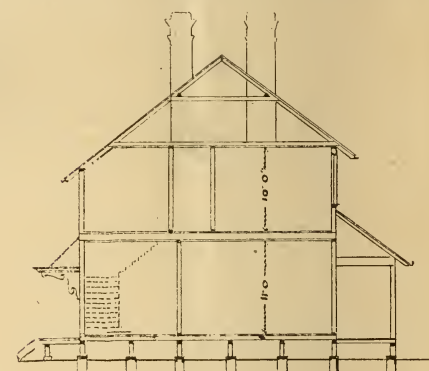
We think this illustration will be of interest to our readers as setting forth the characteristics of a typical small framed house in Canada; and, in considering the method of construction, it is well to remember the extremes of heat and cold to which such buildings are subjected, for it proves that thick masonry walls are by no means essential to health and comfort.



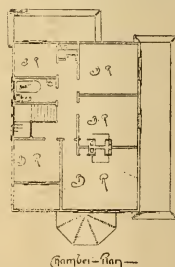
Front Elevation



Ground Plan



Transverse Section



Ground Plan

THE INSULATING CONDUIT METHOD OF WIRING.

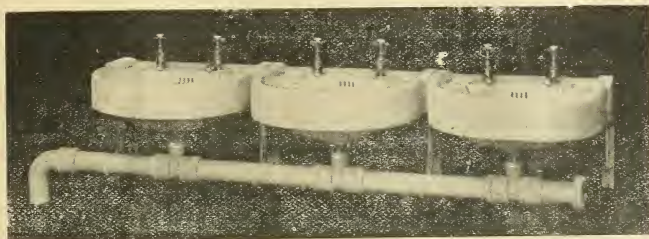
The principle that the advocates of the "insulating conduit method of wiring" urge as a necessary condition in thoroughly efficient, durable, and permanent electric wiring work, is the erection of a protective and insulating duct for the installation of the conductors, a duct that is capable of withstanding injury from outside conditions, or accident occurring from the electrical conductors themselves, and which, when installed, will effectually checkmate any ignorance or carelessness incidental to the erection of the wiring work.

The steel armoured insulating conduit material manufactured by the Conduit and Insulation Co., Ltd., and which is meeting with extended use in connection with the more difficult or important wiring work, is installed throughout a building in a similar manner to ordinary gas pipe construction, the main difference being the use of specially insulated boxes and bends in place of the usual tee and angle pieces. By arranging the lamps or lighting points in sections comprising from 5 to 20 lamps, the wiring can be laid out in 5 or 10 ampere circuits, taken from conveniently-placed distributing fuse-boards provided with the requisite number of ways for the particular

number of circuits being dealt with. The tapping off, switching, and jointing, &c., involved in connecting individual lamps to each circuit is arranged for by the provision of suitable metal armoured insulating boxes provided with the sized nozzles to take the various-sized conduits through which the necessary wires are to be drawn. In making a completely watertight piping system, the porcelain connection fittings designed for use with these insulating boxes are necessary, but the ordinary switches, ceiling-roses, &c., standard on the market for woodcasing and the earlier methods of wiring, can be employed with this conduit system by the use of specially constructed hard wood outlet blocks. The insulating conduit is supplied in convenient lengths, 10 feet long, each length provided with a coupling socket—either screw-threaded or sliding sockets may be employed, but the former practice is recommended, and to be much preferred on account of the certainty of securing a completely moisture-proof and watertight piping system. The advocates of insulating conduit urge that a suitable insulating lining of a definite thickness is necessary to render an ordinary metallic pipe applicable to electrical requirements, inasmuch as it guarantees a perfectly smooth and relatively frictionless interior surface over which the fragile electrical conductors can be easily drawn without damage to their insular covering. The interior insulating lining of the pipe reduces any internal condensation of moisture to a minimum, and prevents the internal roughness incident to manufacture (in iron pipes consequent upon the welding) and also prevents the possibility of the internal "burr" caused by the pipe-cutting tools employed (and which a careless workman may neglect to ream out) causing damage to the insulated conductors whilst they are being drawn in. Electrically the lining forms a further safeguard by preventing the metal tube from being "earthed" to the system, and, in the case of defects, developing an internal "short circuit" from being "burnt out" by the internal arcing. Looking to the limitation of the protection afforded by fuses, and the readiness with which a fuse may become the strongest rather than the weakest point for "fusing," the contention that the advocates of insu-

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FORM OF BLOCK.



lating-lined pipes make—the non-dependence of their system on fuses for safety from electrical fire-risk—is one which our enlarging experience is likely to uphold and enforce.

Again, inasmuch as electrical conductors will carry whatever current may be passed through them, even to their point of disruption, it is recognised as a first principle that in high-class wiring every wire should be *accessible*. In a properly-installed conduit system every length of wire is easily accessible, either from outlet points or intersection boxes, and the complete accessibility of wires laid in this manner proves of great convenience in respect to future alterations or enlargements. In the case of a new building, the insulating conduit system can be installed at the time of construction, and the wires drawn in and connected up at any future time without disturbance to surrounding decorations.

With the general employment of steel armoured insulating conduit, electric wiring construction will be recognised as absolutely free from fire-risk, and the chief requirement of installation would be to ensure that the enclosed wires should be provided with such insulation on them as would enable them to stand up against the voltage of the circuit, when placed under the standard conditions found in a permanently insulating channel. The *perfect erection* and coupling of a conduit "run" can be readily checked by providing that all wires are drawn in *after* the conduit system is completed, for inasmuch as it is impossible to fish or draw wires through an incomplete or imperfect run, the foreman or insurance surveyor wishing to gauge the merit of the constructive work has only to request the withdrawal of any particular circuit and note its replacement. It is obvious also that if an I.R. test is taken after this kind of inspection, a clear indication is obtained, *not only of the present, but future* electrical value of the work.

Experience proves that where a complete system of insulated boxes, tube, &c., is employed, the attainment of a high and permanent I.R. test *presents no difficulty*, as the continuous lining of the system prevents any leakage to earth, and retains this quality with regard to the condition of the insulating coverings on the conducting wires, or changes occurring in their outer surroundings. Many tests or results obtained from existing installations tend to prove that under the efficient protection of steel armoured insulating conduit the standard of insulating covering for the conductors need not be nearly so high as that at present obtaining, a standard which was virtually determined for woodcasing work—that is, under a minimum of protection against deteriorating influences. Furthermore, the present standard of insulating conductors *is a costly one*, and, it is urged, *commercially disadvantageous* from the fact that the "megohms guaranteed" disappear so readily under the slightest carelessness of the wireman during installation, or upon the least alteration in the presupposed conditions to be met.

The growing importance of the question, how to meet the demand for cheap wiring, will, it is expected, call attention to the best method of securing a more practical and economical method of insulation, and it is maintained that an insulating covering arranged *around* the conductors in the form of a fairly rigid tube or conduit, *will supersede* the present practice, which favours a flexible and mechanically weak covering placed directly upon the conductors. In the present state of the art of wiring the important interests of the insulating wire and cable manufacturers tend against a rapid change, but, with the gradual development of central station practice, and a better understanding of the problem of "earthing" one side of the electrical system, it is thought that the increasing employment of steel armoured insulating conduit will lead to the use of either two suitably insulated conductors, or a single bare conductor within such a conduit, with the outer metal armouring of the pipe forming the earthed return. With a bare copper armoured insulating conduit wiring system, one can see the commercial possibility of meeting ordinary gas-piping construction on a *directly competitive price basis*, so that electric wiring would be employed in all new building work, and by those to whom the present comparatively expensive method of wiring forms a barrier.

A standard system of "electric piping" will have an additional advantage from the fact that the experience of the already trained gas-fitter would be utilised, and the amount of electrical knowledge required by him as a conduit fitter could be minimised

by the provision of the set of simple porcelain fittings which are supplied to the outlet boxes and installed in a manner as *practical and effective* as the details of an ordinary gas-pipe system.

The Conduit and Insulation Company, Ltd., urge that the solution of the problem of providing *thoroughly efficient* and low cost wiring will lead to a general advance of the whole electrical industry, as unbounded as the possibilities of electrical application and utilisation, and ask for the encouragement and support of all consulting and other engineers exercising guiding influences.

—:O:—

THE NEW DRAINAGE BYE-LAWS FOR LONDON.

ABSTRACT OF THEIR PROVISIONS.

By Dr. T. ORME DUDFIELD, Medical Officer of Health,
Borough of Kensington.

The drainage bye-laws made by the County Council under Section 202 of the Metropolis Management Act, 1855, and approved by the Local Government Board, have claims upon the attention of a large number of our readers. The bye-laws, it will be remembered, are for "regulating the dimensions, form, and mode of construction, and the keeping, cleansing, and repairing of the pipes, drains, and other means of communicating with sewers, and the traps and apparatus connected therewith." These bye-laws for the most part deal with the drainage of buildings newly erected; but, so far as practicable, apply to any person who shall erect a new building." A brief abstract of their provisions will therefore not be out of place.

Drainage of Subsoil and of Surface Water.—1 and 2. Provision is made to secure in new buildings the drainage of the subsoil and the drainage of surface water (important matters as affecting the dryness, and consequently the healthfulness of the dwelling-house).

Rain-water Pipes.—3. Rain-water pipes must be made to discharge in the open air over a properly trapped gully, or into such a gully above the level of the water in the trap thereof, and no such pipe or channel may receive any solid or liquid matter from any water-closet, urinal, slop, or other sink or lavatory.

Materials, &c., for Drains.—4. A sewage drain must be constructed of glazed stoneware or of cast iron, "or of other equally suitable material;" the joints cemented or caulked, as the case may be. The drain must not pass under any building if any other mode of construction be practicable. It must not be of a less internal diameter than 4 in. It must be laid on and partially embedded in concrete, and with a suitable fall. It must be water-tight and be capable of resisting a pressure of at least 2 ft. head of water. (The thickness and weight of iron pipes in proportion to diameter are prescribed.) Whenever practicable, adequate means of access to the drain is to be provided at each end of such portion thereof as is beneath a building. (The composition of the concrete is prescribed.) Every inlet to the drain, other than that of the ventilating pipe, is to be "properly trapped by an efficient trap, so constructed as to be capable of maintaining a sufficient water seal." No bell-trap, dip-trap, or D-trap may be used in connection with the drain.

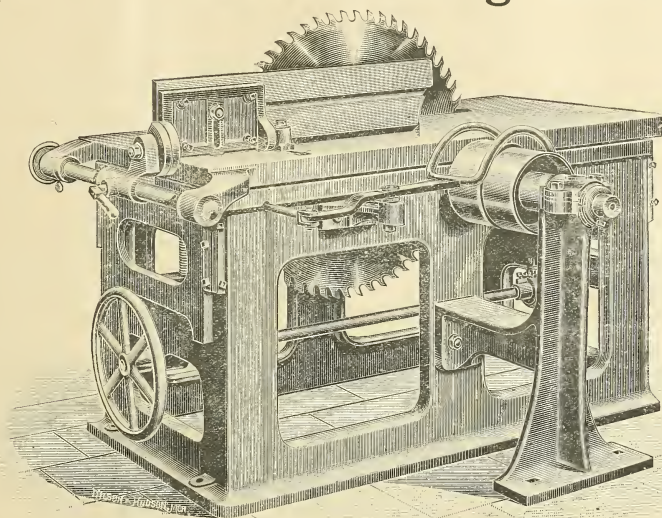
Drains to be trapped from Sewer.—5. This bye-law reads as follows:—Every person who shall erect a new building shall provide in every main drain or other drain of such building which may immediately communicate with any sewer, a suitable and efficient intercepting trap at a point as distant as may be practicable from such building, and as near as may be practicable to the point at which such drain may be connected with

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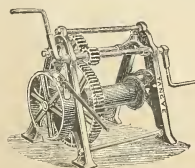
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the sewer. He shall, except in cases where the means of access to be provided in compliance with the preceding bye-law shall give adequate means of access to such trap, provide a separate manhole or other separate means of access to such trap for the purpose of cleansing it.

Access to Trap.—6. Means of access to the drain must be "water-tight up to the level of the adjoining ground surface or roadway, and be fitted with a suitable manhole cover," which must be air-tight if placed within a building.

No Right-angled Junctions.—7. No right-angled junction, either vertical or horizontal, allowed in the main drain. Branch or tributary drains to join another drain obliquely in the direction of the flow, and as near as practicable to the invert thereof.

Ventilation of Drains.—8. At least two untrapped openings to the drains are to be provided. Alternative arrangements are specified, which may be adopted "as the circumstances of the case may render the more suitable and effectual." Gratings or covers to openings (to secure free passage to air, with apertures of indicated aggregate extent) are to be provided to every such opening to the drain for the purpose of preventing any obstruction in, or injury to, any pipe or drain. No bends or angles in the ventilating pipe are to be allowed, except where unavoidable. Size of pipes: The internal diameter is to be "not less than four inches." Use of soil-pipes as ventilating pipes:—The soil-pipe of any water-closet, or the waste pipe of any slop-sink, constructed or adapted to be used for receiving excremental filth, may be used to provide the necessary opening for ventilation, where the said pipe satisfies the conditions prescribed in the case of an ordinary ventilating pipe. It is provided that a soil-pipe or waste pipe, of an internal diameter of not less than $3\frac{1}{2}$ in., and complying with the previously prescribed conditions, may be used for the ventilation of a drain having an internal diameter of not more than 4 in.

No Inlets to Drains within Buildings.—9. There may be no inlet to a drain within a building except such as may be necessary from the apparatus of any water-closet, slop-sink, or urinal.

Material of Waste Pipes.—10. Waste pipes for carrying off water from a lavatory or sink (not being a slop-sink or urinal constructed or adapted for carrying off excremental filth) may be constructed of lead, iron, or stoneware, and must be trapped immediately beneath such lavatory or sink by an efficient syphon trap—of lead, iron, or stoneware, and with means for inspection and cleansing—for ventilation into the external air whenever such ventilation may be necessary to preserve the seal of such trap. Traps to waste pipes: It will not be lawful to construct or fix, in connection with a waste pipe, lavatory, or sink, any trap of the kind known as a bell-trap, a dip-trap, or a D trap. Waste pipes to discharge in the open air: Every pipe for carrying off waste water to a sewer must be made to discharge in the open air over a properly trapped gully, or into such a gully above the level of the water in the trap thereof.

Soil-pipes.—11. Whenever practicable, the soil pipe is to be outside the building and constructed in drawn lead or of heavy cast iron; where it is necessary to construct the soil-pipe within the building the pipe must be constructed in drawn lead, with proper wiped plumbers' joints, and so as to be easily accessible. (The weights of leaden pipes, and the thickness and weight of iron pipes are prescribed.) Joints: The socket joints of a cast iron soil-pipe are to be made with molten lead properly caulked; flanged joints to be securely bolted together with some suitable insertion. No connection with rain-water and waste pipes: The soil-pipe is not to be connected with any rain-water pipe or with the waste of any bath, or of any sink, other than that which is provided for excremental filth. No traps: There is to be no trap in the soil-pipe, or between it and any drain with which it is connected. Diameter: The soil-pipe is to be circular; not less than $4\frac{1}{2}$ in. in internal diameter, and is to be continued upwards, full bore, and (except where unavoidable) without any bend or angle, to such a height, and in such a position as to afford by means of the open end a safe outlet for foul air.

Connection of Lead Soil-pipe, &c., with Iron Drain, &c.—12. Prescribes the method of connecting lead soil-pipe, waste pipe,

ventilating pipe or trap with an iron pipe or drain communicating with a sewer.

Connection of Stoneware Trap of Closet, &c., with Lead Soil Pipe, &c.—13. Prescribes the method of connecting a stoneware or semi-vitrified ware trap or pipe with a lead soil-pipe or trap communicating with a sewer.

Connection of Lead Soil-pipe &c., with Stoneware Drain, &c.—14. Prescribes the method of connecting a lead soil-pipe, waste pipe, ventilating pipe, or trap with a stoneware or semi-vitrified ware pipe or drain communicating with a sewer.

Connection of Iron Soil-pipe, &c., with Stoneware Drain, &c.—15. Prescribes the method of connecting an iron soil-pipe, waste pipe, ventilating pipe, or trap with a stoneware or semi-vitrified ware pipe or drain communicating with a sewer.

Connection of Stoneware Trap of Closet, &c., with Iron Soil-pipe, &c.—16. Prescribes the method of connecting a stoneware or semi-vitrified ware trap or pipe with an iron soil-pipe, waste pipe, trap, or drain communicating with a sewer.

Ventilation of Trap of Water-Closet.—17. In the case of any water-closet the soil-pipe of which communicates with a sewer, and is in connection with any other water-closet, the trap of every such water-closet is to be ventilated into the open air at a point as high as the top of the soil-pipe, or into the soil-pipe at a point of the highest water-closet connected with such soil-pipe; the said ventilating pipe to have in all parts an internal diameter of not less than 2 in., and to be connected with the arm of the soil-pipe or the trap at a point not less than 3 in. and not more than 12 in. from the highest part of the trap, and on that side of the water seal which is nearest to the soil-pipe; the joint between the ventilating pipe and the arm of the soil-pipe or the trap to be made in the direction of the flow. Such ventilating pipe to be constructed in drawn lead or of heavy cast iron—of drawn lead only if necessarily within a building. (The weight of lead and iron pipes is prescribed.) The joints in and the connections to such ventilating pipe to be made in the same manner as if it were a soil pipe.

Slop Sinks, for Filth and Urinals.—18. Beneath any such sink for receiving excremental filth for conveyance to a sewer an efficient syphon trap is to be fixed, so constructed as to be capable of maintaining a sufficient water seal between such sink, &c., and any drain, soil-pipe, or waste pipe in connection therewith. In connection with such sink there shall not be a bell-trap, a dip-trap, or a D-trap. The ventilation of the trap of the slop sink or urinal, and the construction of the waste pipe thereto, are to be in compliance of the preceding bye-laws, which are applicable to the ventilation of the trap of a water-closet, and the construction of a soil-pipe; the internal diameter of the waste pipe of the sink, &c., to be not less than 3 in. (The weight of lead and iron pipes is prescribed.)

Maintenance in State of Repair.—19. "The owner of any building shall, as respects such building, at all times maintain in a proper state of repair all pipes, drains, and other means of communicating with sewers, and the traps and apparatus connected therewith."

Penalty.—20. For any offence against any of the foregoing bye-laws £2, and in the case of a continuing offence a further penalty of 20s. for each day after written notice of the offence given in accordance with Section 202 of the Metropolitan Management Act, 1855.

Application of Bye-laws to Existing Buildings.—21. "These bye-laws shall so far as applicable, apply to any person who shall construct or reconstruct any pipe or drain, or other means of communicating with sewers, or any trap or apparatus connected therewith, so far as he shall effect any such works in any building erected before the confirmation of these bye-laws, as if the same were being constructed in a building newly-erected."

The importance of the last-cited bye-law will be obvious; and generally, it may be observed, that the bye laws justify the past action of the Sanitary Authority of Kensington, and the practice of their officers in the Public Health Department, in regard to the several matters dealt with in the bye-laws relating to the construction and trapping of drains.—*The Sanitary Record.*

NEW BOOKS.

SURVEYING AND LEVELLING INSTRUMENTS. By William Ford Stanley. Third Edition. London: E. and F. M. Spon, 125 Strand.

The two previous editions through which Mr. Stanley's work has passed have served to make it pretty well known to students and to engineers. Mr. Stanley's life-long experience as a maker of mathematical instruments, gives a very practical value to his observations. The present work is more or less limited to instruments used in the field, and although the author frankly confesses his own experience out of doors has been limited, he has contrived, with the assistance of several surveyors and engineers who have assisted him with their advice, in supplying any deficiencies which otherwise would have existed under this head. The great value of Mr. Stanley's work is that it represents the maker's or mechanic's view of the instrument and to the practical man who desires to make greater use of instruments than rule-of-thumb observations, the value of an intimate acquaintance with the mechanism and working of instruments, particularly those of a delicate and complicated character, is extremely useful; indeed, it is a knowledge which is essential to men in the Colonies or other remote places where recourse to an optician cannot readily be had. From this point of view Mr. Stanley's book possesses a distinct value peculiar to itself.

The work is well arranged under its various heads, and gives a good account of all the principal instruments in general use. Of course, some of the specialities of the author's firm come in for special notice, but is hardly to be cavilled at, seeing the reputation for excellence of manufacture which the firm has attained. Amongst such may be mentioned the author's new model theodolite with mechanical tribrach stage, his special transit theodolite for railway work, and a gradiometer patented by him providing means of extending and fixing a scale of gradients by an open reading upon a divided helix, together with several novelties.

The brief historical sketch given is of interest, as are the observations upon the progress in the manufacturing of machinery, by means of which great accuracy, lightness and facilities in cutting, turning and dividing, &c., is nowadays attained.

ELY—THE CATHEDRAL AND SEE. By the Rev. W. D. Sweeting, M.A. London: George Bell and Sons. 1901.

We have recently received two volumes of Messrs. Bell and Sons' admirable hand-books. We have before now praised the excellence of this series, so we need not reiterate. Still, we cannot refrain from a word of commendation for the manner in which the book before us is produced, the good, clear type and paper, excellent illustrations, and good-looking handy binding, and the price, which puts the books within the reach of the poorest student of the English Cathedrals. Of Norman date—its unique Western front, the glorious few which appeal more to the imagination than Ely—Lincoln may claim the crown, York may be richer, but Ely has a solid grandeur that is all its own. It is, therefore, with a great degree of pleasure that one opens a book such as this, and refreshes old memories of pleasant days in one or other of those old Cathedral towns.

Ely Cathedral yet contains much of the earlier building of Norman date. Its unique Western front, the glorious nave, and, of later date, the somewhat curious octagon over the crossing. Ely traces its origin to a very early date. King Ethelbert is said to have built a church somewhere prior to 673 near the Cathedral, and a field is still pointed out as the site. No description is extant of the buildings of the monastery first erected by Queen Etheldreda, afterwards first Abbess of the Conventual Order at Ely, who died June 23rd, 679. We only know that the present Cathedral is on the site of the monastery.

Ely, it is generally supposed, derives its name from "Eely," or "The Island of Eels," an origin often scoffed at, but now held to be based on good authority, and not so far-fetched, when we recollect that Ely is right in the Fen country, and that there are now fertile lands around the town where once were dank and watery marshes or fens. Ely,

too, has very historic traditions, for in the Isle of Ely was made the last stand against the Conqueror in the Norman invasion.

The erection of the existing structure was first conceived by Simeon, the ninth Abbot (1081-1093). Simeon devoted much of his private fortune to the furtherance of this ideal, and, though an old man, lived to see a very considerable portion of the church finished. During the twelfth century the building advanced, and Bishop Riddell (1174-1189) "carried on the new work and tower at the west end of the church, almost to the top." Addition succeeded addition. The glorious work of the choir is one of the greatest charms of the church. Although Sir George Gilbert Scott had a good deal to do in the way of "restoration," he seems to have laid rather a more kindly hand upon Ely than was his wont. The author seems struck with the "beautiful screen of oak, with brass gates, designed by Scott." Most latter-day architects would be less struck with its beauty, though, truth to say, it is a fine design in its way, though of the usual "Scott" type.

The Rev. Mr. Sweeting deserves to be warmly congratulated on the interesting manner in which he has contrived to blend the historic and the architectural narrative, making altogether a delightful little volume.

THE ABBEY CHURCHES OF BATH AND MALMESBURY AND THE CHURCH OF ST. LAWRENCE, BRADFORD-ON-AVON. By the Rev. T. Perkins, M.A. London: George Bell and Sons, 1901.

We have, in our notice of the Cathedral Church of Ely, referred to the superior excellence of these handbooks of Messrs. Bell, books which possess a value distinct above that of the so-called guide books so often hawked about locally, and what applies to one of these books of the series, in a general sense applies to the others.

The Rev. Mr. Perkins has had an interesting subject to deal with, and one which should possess for the architect a special interest. Very big cathedrals do not as a rule offer the same fascination for study as does a smaller and more distinctive building.

The chief interest of Bath Abbey is that it may be regarded as the last built of the great abbeys now remaining in its entirety. King's College Chapel and Henry VII.'s Chapel at Westminster, no doubt equal, and in some ways, particularly in the former case, may surpass Bath Abbey, but both these are adjuncts to other buildings, whereas Bath is complete in itself. Bath Abbey dates back to very early times indeed, but little of that early foundation remains. Its value is in that it is a peculiarly beautiful and complete example of late English perpendicular work.

Malmesbury Abbey, which we lately had the advantage of seeing for the first time, is of a different character, for its interest lies almost wholly in its early work. The superb Norman nave arcade, so peculiarly impressive, and the unsurpassed Norman doorway of the great south porch, are all dealt with in the book we notice, as is also the fine Market Cross of Malmesbury.

The Church at Bradford-on-Avon is quite a small structure, but very interesting and peculiar in character. Space does not permit us to even sketch the history so well outlined by Mr. Perkins; but to the student, the architect, and the casual visitor alike, we can heartily recommend this guide to three most interesting churches.

Measuring Round Timber.—The usual practice, in measuring round tapering timber, is to take the girth of each piece at the middle of its length. A quarter of the girth is then squared in inches, and multiplied by the number of feet run in the log, the resulting figures being divided by 14, which gives the answer in cubic feet. A tape measure, known as girthing tape, is often used by timber measurers. It is 12 ft. long, marked with ordinary inches along one side, and also with feet reduced with scale—1 in. = 1 ft.—showing the cubical contents of 1 ft. on the back of the tape behind each figure. "Hopppus's Measure" gives much invaluable information to those who have to deal with the measurement of round or square timber.

BREVITIES.

Reverberation.—One of the remedies is to break up the surfaces of walls. lofty rooms with unbroken walls are liable to the effect of reverberation or echo. Drapery in the roof is found of value in checking the evil. We would suggest sounding-boards in preference placed across the angle of church near the pulpit, and frames of the proper size stretched with canvas may be tried in positions, and the results noted.

The Best Marble used by the Greeks and Romans came from Mount Marpessa, in the Island of Paros, in the Ægean. That from Pentelicus and Hymettus, near Athens, was next in quality.

Which Building in England has had the Greatest Number of Men Employed in its Construction?—The Great Exhibition Building of 1851, in Hyde Park, London, which subsequently was removed and re-erected as the Crystal Palace at Sydenham. The construction of that immense building of glass and iron in Hyde Park only occupied eighteen weeks, while 7,000 men were working upon it. Some idea of its vastness may be obtained from the following items used in its construction:—900,000 feet of glass, weighing 400 tons; 9,642 tons of iron used in the framework, besides 175 tons of bolts and rivets, and 103 tons of nails. Were the panes of glass used placed end to end, they would have extended 242 miles. For heating purposes, fifty miles of pipes were placed under the floors, and ten miles of piping were required to supply water to the fountains. Four galleries ran lengthways, and others round the transept. The ground floor and galleries contained 1,000,000 square feet of floor-surface. The great Pyramid of Ghizeh is said to have occupied 100,000 men for fifty years in its erection, in which 7,000,000 tons of stone were used. In constructing a retaining wall across a mountain valley near Bombay, two miles long, and 118 feet high, 12,000 natives were employed; while as many as 4,000 men were engaged in the construction of the Forth Bridge.

The Tower of Pisa.—This tower, which was erected about the year 1150, by the German architect Wilhelm, of Innsbruck, was designed as a belfry for the cathedral, and it leans so much from the perpendicular that a plummet dropped from the top falls at a distance of about fifteen feet from the base. The ordinary observer wonders that, with so great a deviation, it does not come to the ground; but it stands in obedience to the law of physics, by which any body of matter will maintain its position so long as a perpendicular line, drawn from its centre of gravity, shall fall within its base. The "centre of gravity" is the balancing point, or point at which the entire weight of a body will be equally divided, and exactly balanced on the one side and on the other. As this point is found in the leaning tower to fall within the space covered by its foundations, there is no reason why it should not continue to stand for many centuries to come. It is thus fifteen feet out of the perpendicular.

Water Pressure.—The pressure of quiet water against, and perpendicular to, any surface whatever, according to Trautwine, is as follows:—Multiply together the area in square feet of the surface pressed, the vertical depth in feet of its centre of gravity below the surface of the water, and the constant number 62.5 the product, will be the pressure in pounds. The centre of pressure is one-third the vertical depth from the bottom. Professor Rankine gives the following for pressure at any point:—The intensity of pressure at the lower of two points in a still fluid is greater than the intensity at the higher point by an amount equal to the weight of a vertical column of the fluid whose height is the difference of elevation of the points, and base a unit of area. By this you can find the pressure at any point.

Putty for Glazing Greenhouses.—In glazing a greenhouse it is advisable that the glass should only be bedded in putty, front putty being entirely dispensed with; this is found by practical experience to be the better plan. Well paint the rebate with lead and oil, then run a layer of putty made from whiting and boiled oil, to which a little red-lead may be added. Cut the glass in tight to size and well rub down to bed, and sprig along the edges, after which give the edges and rebate three coats of good oil colour. The reddish putty contains a portion of red-lead; this putty, which sets very hard and is very durable, is not used for ordinary glazing owing to the extra cost, but is used chiefly by hot-water engineers and boilermakers for making joints. Fish oil putty is much approved of for green houses by some authorities.

Asbestos will stand heat as long as any known substance (unless it be platinum, which is far too expensive for use on a large scale), and is practically indestructible by means of heat. But there is probably no better material than firebrick, specially made for the purpose, and known in the trade as "blast furnace firebrick." Bricks and tiles made of fire-clay can be rendered more lasting by giving them a coating of plumbago, charcoal, and silica (pure fine quartz sand) intimately mixed together. Asbestos powder made into a thick paste with liquid silicate of soda, and spread over firebricks, prevents the bricks from cracking or being burned away. This paste hardens quickly, and can stand any amount of heat.

ROYAL VETERINARY COLLEGE OF IRELAND.

The commencement of the second session of the College is close at hand, and with the view of having the buildings ready for the accommodation of the students, no effort is being spared to ensure their completion by October. From the Pembroke road there is little evidence of any building activity in its near vicinity, but the site for the College extends backwards from the Principal's house to the Shelbourne road, and it is here that one may see the great blocks of buildings that are to form the hospital and the teaching school of the College. The hospital will accommodate, besides horses, all other species of the domestic animals. The fittings of the stables, loose boxes, and cow byres are by Musgraves, of Belfast. The patients are housed in what is termed Block A. In Block B is an operating theatre, lined with white enamelled brick, a forge, pharmacy, and professor's room, with laboratory and classrooms. In Block C, next the Shelbourne road, is a caretaker's house, containing two living rooms and three bedrooms, with the usual conveniences. Then follow a waiting-room, apartments for a resident surgeon, a class-room for the study of osteology, and students' room. On the first floor overhead is a laboratory and dark room, and connected with these is a large classroom for the teaching of practical microscopy. Next, in the centre of this block, which is nearly 200 feet long, is a large lecture theatre, and following, upon the ground floor, is the practical anatomy room, lined throughout with enamelled brick. The preparation room is adjacent to the practical anatomy room. It also is lined with enamelled brick. Lastly, upon the ground floor, is accommodation for animals under observation. Above the practical anatomy room are the pathological and bacteriological laboratories. These balance in the building the practical microscopy room on the other side of the lecture theatre. The progress made in the building of the Royal Veterinary College is very satisfactory, and it is pleasing to note that our students can now be educated in their own country for the veterinary profession, and in a College which, when complete, will be second to none.

An interesting event took place at the New Buildings of the Royal Veterinary College, Ballsbridge, on Tuesday afternoon. The Vice-President of the Department of Agriculture and Technical Instruction, the Right Hon. Horace Plunkett, laid a memorial stone in the facade of Block C. The ceremony was quite private, and there were no speeches. Mr. L. A. M'Donald, the architect, provided a silver trowel, with which the stone was laid. After Mr. Plunkett had declared the stone well and truly laid, the company separated.

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TRADE JOTTINGS.

The Town Hall, Oakham, is being warmed and vent lated by means of Shorland's patent Manchester stoves, patent exhaust roof ventilators and special inlet tubes, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

We had recently an opportunity of going through the workshops of Messrs. Sharp and Emery, of Great Brunswick-street, Dublin, and it was really a gratifying thing to note the excellence of the carved oak work there to be seen. Better workmanship there could not well be; fine, sound well-seasoned oak and skilful carving were to be seen. The firm have just completed a carved oak aumbrey door for St. Mary's, New Ross, which is a creditable bit of work; while a large contract is in hands for Cork R. C. Cathedral, and comprises Bishop's throne, pulpit, and choir stalls, all in richly-moulded carved oak.

Mr. John P. White, of the Pyghtle Works, has just published a new catalogue of garden furniture. It is only of late years that architects have begun to realise the enormous importance of a suitable garden setting to their architectural conceptions. Long ago the old English "formal" garden was an indispensable adjunct to the country house of its day, and the feeling for a formal garden retained its hold on the English mind, we may say, to the close of the 18th century—indeed it, to some extent, never lost that hold. Then came the period of the Italian landscape garden which derided formality and convention, and aped Nature (doing it badly), and shewing itself as a style of gardening only suited for the imposing and grand conceptions of the Italian Renaissance. Recently, however, architects in England have again begun to see that the type of garden applicable as the setting of a Blenheim Palace is not quite the same as that suited for a quiet country vicarage; or again, that the suburban house of our day demands a treatment of its own; for instance, the flagged or paved path has a certain value and applicability of its own. Mr. White has designed many useful and suitable types of garden furniture calculated to enhance the value of garden treatment, and every house destined to possess a garden, however small, should have that garden considered as an integral part of the scheme. Likewise Mr. White has done a lot to place at the disposal of people of moderate means a revival of the old-fashioned wooden mantle piece, simple and good in character, cheaper than the hideous marble monstrosities of the ironmonger, and nearly as cheap as the cast iron abortions so common, but now happily losing favour. Messrs. Maguire and Gatchell, of Dawson-street, Dublin, hold an agency for Mr. White's mantels.

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Railway Gauges.—Mr. C. E. Stretton, a well-known authority upon all that pertains to railways, has recently published some interesting notes as to the standard gauge or measurement between the metals adopted by most iron roads. An excuse for reference to this matter is afforded by the action of the G. W. Railway of England in relinquishing the last section of their broad-gauge system, which they have lately done in favour of the narrow gauge long ago adopted by the other companies. This standard gauge was suggested by George Stephenson, and has a measurement of four feet eight and a half inches between the metals. "Why an odd number of inches; why not make it four and a half or five feet at once?" many will naturally exclaim. It came about in this way. Two and a half centuries ago there existed at Newcastle-on-Tyne a wooden way for the accommodation of coal carts, and this consisted of two planks laid on a wooden bed, the distance from the outside edge of which was five feet. George Stephenson adopted the same gauge as being a convenient one; but the flange of the modern wheel touches the inside, not the out-side of the rail. We therefore take as the gauge the distance between the inner edges of the two rails. Each rail is one and three-quarters of an inch in breadth, and the three and a half inches thus added to the gauge measurement already quoted makes five feet. In Ireland the broad gauge is still adhered to.

CORRESPONDENCE.

IRISH WAYS AGAIN.

HOW ORDERS GO ACROSS THE CHANNEL.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—In former issues of your wide-awake journal you have given instances of the perpetual dilatoriness of Irish firms, and of their unbusiness-like methods. Here are fresh examples, which have recently occurred, and which show up the utter happy-go-lucky character of the Celt.

The Government are erecting immense buildings not fifty miles from Dublin, and a few weeks ago asked a certain firm in that city to do the printing of some specifications and bills of quantities. They kept procrastinating so long that at least six sharp letters had to be sent from me to time, reminding them of their delinquencies. Then, when the proofs did arrive, they were so full of errors that second ones were insisted upon. In these, entirely new and original mistakes were glaringly obvious, entailing endless trouble with corrections. Not only so, but great delay was caused by the firm *losing* the specifications and quantities in their printing-house, which they reluctantly admitted, after trying to throw the blame on the officials. The net result was that the buildings were put back months in execution, and the printing of these long and important documents has been given (by the Government itself) to London firms. Thus orders go across the Channel.

The writer has had an experience of a similar nature. About ten months ago he gave a small printing order, about a building subject, to a Dublin firm, at their own request. They said they had some new plant and machinery, which could rapidly execute any small job. The work was done, the bill presented, and duly paid. Then another firm appears on the scene, and sends in a similar bill to the writer. It appeared the first firm had *sub-let* their order (their new machinery was all a myth—merely a subterfuge to get the work) to the second one, and never paid the bill. This was explained, yet the author got *another* request to pay the bill from the second firm, to whom he had to write a scorching reply, reminding them of his previous letter. How long this three-cornered duel will go on remains to be seen.

A large brick-making company in Ireland sent one of their engines, two months ago, to a firm of engineers in Dublin for repairs. These were done so badly that the boiler of the engine was ruined, and a new one will probably be required, not to speak of the immense delay and the expense of hiring another engine in the meanwhile.

But why go on? Many more instances could be given, but your readers would eventually lose faith in their country people altogether. And the patriots howl. It is *the people* who are at fault—not the country.—Yours distressfully,

A CONVERTED IRISHMAN.

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Ages of English Cathedrals.—Winchester, in its earliest form, must hold the place of the most ancient. The original cathedral claims, on very apocryphal authority, to have been built in 177, by the newly-converted British King Lucius, on the site of a great Pagan temple. Another was built in 313, and another in 871. The present pile, regarded in its various parts, is of at least seven principal dates; and if viewed in its minor features, its smaller accessories, its remodelings, and its restorations, must be pronounced to belong to ten centuries. The oldest parts of the edifice belong to a pile in the Saxon style, by the famous architect and bishops of Winchester, to Ethelwold in 980. Lichfield Cathedral is said by some authors to have been erected in 300, and by others in 667, and rebuilt in 700. Canterbury is very ancient; it is said to have been founded by St. Augustine, as also is Rochester. They appear to be of about the same date. The former was founded in 598, and partially rebuilt in 1080; the latter between 600 and 1000. Exeter had a cathedral standing in 1050.

THE IRISH BUILDER

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, SANITATION,

ARTS AND HANDICRAFTS.

Every Second Thursday.

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HEAD OFFICE

SEPTEMBER 12, 1901.

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DUBLIN

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TOPICAL TOUCHES.

The slate trade at Bangor is very depressed, owing partly to the decrease in building operations, and partly in the influx of American slates.

Mr. Luke Macassey, C.E., of Belfast, has submitted a scheme for the water supply of Enniskillen at an estimated expenditure of £4,100.

A strike has occurred amongst the masons employed at the cottages which are being built in the Rathdown Rural District. The local rates of wages are 8½d. per hour, which the contractor was paying. The men struck to secure 9½d. A settlement has not yet been arrived at.

The curricula of the London Architectural Association reaches us, and it shows a distinct march forward. Both the day and evening schools will soon be, practically speaking, in full swing. The day school seems destined to achieve great results. Whether altogether in the interests of art remains to be seen.

The Dublin Corporation have received letters from the Secretary of Public Works, stating that the Lords of the Treasury have sanctioned a loan of £254,000 for electric lighting purposes, and two smaller sums, amounting to over £1,000, for sewage works. Additional loans applied for to the amount of £11,000 were refused.

Two new and important deposits of marbles have just been discovered in the Carrara district. The stone (says a *Pall Mall Gazette* correspondent) is finely marked in rose, black, and other shades. One of the deposits is at Groggnans, already famous for the "pigeon's throat" marbles, and at Castelpoggio, rich in red varieties.

The Killaloe and Victoria (Irish) slate trade is looking up. Amongst the recent orders secured by the former firm was one from one architect's office for slates for a large church at Belfast, a meeting-hall, and twenty-two cottages, all the slates being cut in small sizes, and very thick, which is the secret in using Irish slates.

Mr. Augustus St. Gaudens, who has undertaken to complete a monument to Mr. Parnell in five years, at a cost of forty thousand dollars, is one of the leading sculptors in the United States. He was born in Dublin in March, 1848, but was taken to the United States in his infancy. He learned the trade of a cameo cutter, but displayed such artistic aptitude that his friends enabled him to pursue his studies in Paris and Rome.

Plans for a monster central station to be used by all the railroads entering Chicago, for both freight and passenger purposes, and costing £8,000,000, have been agreed to by the City Council and the representatives of the railway companies. The station will be the largest in the world.

Mr. Thomas Robertson, who recently retired from the position of chairman of the Board of Public Works in Ireland, and who was at one time superintendent on the line of the Highland Railway, and thereafter general manager of the Great Northern Railway of Ireland, has been appointed a Director of Railways in India.

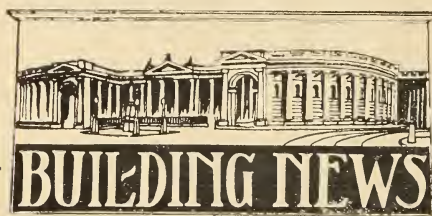
Our contemporary, *The Leader*, pays us the compliment of quoting *in extenso* the first paragraph of certain remarks which we recently ventured to make. This is praise, indeed. We make no comment upon our contemporary's comments, but return our best thanks for the compliment paid us.

The exhibition of Irish arts and industries at the Horse Show at Ballsbridge, was, on the whole, distinctly hopeful. The lace work was really excellent; the wood carving showed some signs of originality, and was fairly crisp and spirited in execution. The "poker-work," we hope, will be banished from the next display. It is a very crude form of "parlour-art." The brass repousse work, too, was good, and again showed a certain freshness and vigour—though it must be admitted there was a feeling of amateurishness running through all the exhibits.

A new free library, to be set up near the City Technical Schools on the southern side of the city, is recommended in a report to be submitted by the Corporation by the Public Libraries Committee. The suggested site meets with general approval, and with the erection of this library the municipal library movement will have reached an important point in its beneficent progress. It is late in the day to say what free libraries, judiciously managed as our libraries are, have done for the people—to try to estimate how much they have done to up-lift, to enlighten, and to amuse, and this library would be welcomed by thousands at the southern side of the city.

The Department of Agriculture and Technical Instruction for Ireland notify that the session of the Royal College of Science for 1901-1902 will commence on Tuesday, 1st October next. Diplomas of associateship are given in the faculties of manufactures (chemical), engineering, mining, applied physics (for electrical engineers), etc., and natural science. A course in technical agriculture has recently been added. Two Royal Scholarships are completed for at the end of the first year, giving free admission to all the courses for the two following years, and an allowance of £50 per annum. The entrance examination for the three years' associate course will be held on the first day of the session—subjects: mathematics and elementary practical geometry. Particulars of the course may be seen on reference to our advertising columns.

Among the several departments into which the work of the forthcoming Cork International Exhibition of 1902 has been divided, the department of Fine Art and Archæology is not likely to lack interest and attractiveness. Besides the Historic Loan Collection, there will be a Fine Art Exhibition on the usual lines, in which pictures, painted by artists of any nationality, will be accepted, whether for sale or otherwise, and hung in a separate gallery. It is also intended to arrange a shilling Art Union, which is certain to be a very popular institution. Objects, besides pictures, will be provided for in other sections of the Fine Arts Department, such as sculpture, if the difficulties of carriage can be overcome, and photography, but it is doubtful how far it may be possible to include such arts as wood-carving, metal or plaster work, or even furniture treated historically, for in the natural course these subjects would belong to the domain of arts allied to industries. Last, and not least, will be the archæological section under the immediate direction of one of the leading archæologists of the South of Ireland.



Antrim.—At the monthly meeting of the Antrim Board of Guardians, held recently, the chairman (Mr. Ferguson) presided. Mr. Young, in pursuance of notice of motion, moved to rescind the resolution limiting the amount of £800 to be expended on the dispensary and medical officer's residence at Crumlin. Mr. Boyd said there was nothing in the motion to limit the expense. Mr. Nelson, in seconding the motion, said the undertaking was under consideration for some years, and it was near time that some practical steps were taken. The motion was carried unanimously on condition that the burden on the rates do not exceed £800. Mr. Ferguson, architect, Belfast, wrote under date of 26th August, 1901:—"As arranged at the meeting of the Guardians on the 15th inst. I have prepared and submitted to the two lowest contractors a list of small reductions in the Crumlin Dispensary, plans and specifications, with instructions to have same priced and lodged with the clerk." Two tenders were sent in at reduced prices. Mr. Caldwell, £811 17s.; Messrs. McAuley and McIlroy, £790. Mr. Ritchie proposed, and Mr. James Campbell seconded, that the lowest tender be accepted. Mr. Semple proposed that the highest be taken. On a division, 24 voted for the lowest and 2 for the highest. The former was consequently accepted.

Belfast.—THE PROPOSED NEW BOARD ROOM.—LOCAL GOVERNMENT BOARD DECISION.—The following letter was read:—"Local Government Board, Dublin, 2nd September. Sir,—With reference to the correspondence and further inquiry on the subject of the proposal of the Board of Guardians of the Belfast Union to erect a new Board-room and offices, at an estimated expenditure of £13,500, I am directed by the Local Government Board for Ireland to state that, having regard to the very large sum involved to the divergence of opinion exhibited at the inquiry, and to the comparatively near approach of a general election of Guardians next year, it is considered desirable that the Board should withhold their sanction to such an important proposal until the election of the new Board of Guardians shall have taken place.—I am, sir, your obedient servant, A. H. Barlas, Acting Secretary." Mr. Preston greeted the reading of the letter with the remark that the best thing they could do was to resign.

Ballinasloe.—The Governors of Ballinasloe Asylum entered into heavy liabilities for the erection of a new hospital wing before the necessary loan was sanctioned by the Treasury. They now find themselves in the position that the work is practically finished, while the loan has only been sanctioned recently to be doled out in instalments which are practically useless to them. Further, the contractor charges interest on the amount of money certified to him, and which remains outstanding. The action of the contractor is legitimate, but the crux arises that under the Local Government Act no interest of this kind can be paid by public bodies without being liable to surcharge. A mistake has been made for which the present governors are not responsible, but with the consequence of which they will, in all probability, be visited.

Cork.—LOCAL IMPROVEMENTS. Considerable progress is being made with the building of the new Post Office in Gladstone-street, by the contractor, Mr. Hayes, Fermoy. The walls, all of brick, are roof high now, and when the shell is complete, the internal fittings should not take long to put up. The work is to be all finished by next February. The large addition which Mr. John Magner is making to his hotel on the Mall, is fast approaching completion too. Mr. Neil Boles is also pushing forward energetically the work of re-

pairing the County Courthouse front. The building is at present "shrouded" in scaffolding, and stone-cutters are busy hammering a new face on the stonework of the facade.

Clonmel.—It is stated that the case of Hackett, county surveyor, v. County Council, Tipperary S.R., which has been the subject of considerable litigation, has been settled by the county council paying the salary which was awarded by the recent sealed order of the Local Government Board.

Clonmel.—The subject of the Workhouse drainage scheme again came up for discussion last week. It will be remembered that the work was entrusted to Mr. Hackett, the County Surveyor, who, in turn, proposed to employ Mr. Gardiner, Consulting Architect to the Board of Control, as Quantity Surveyor for the new works, which are estimated to cost £3,500. The matter was again postponed.

THE SANITARY WORKS.—The question of the much-needed sanitary work for Clonmel Workhouse Hospital was discussed, and again adjourned last Saturday. It is sincerely to be hoped that the matter will be definitely arranged soon, for the hospital is admittedly in a very bad condition, as Dr. Crean has over and over again reminded the Board.

Castlereagh.—A gathering of Western Nationalists and others will take place at Castlereagh on the occasion of the unveiling of the memorial to John Lavin. The memorial, which takes the form of a magnificent Celtic Cross, is the work of Mr. Edward O'Shea, of the Kilkenny Marble Works. It is modelled on the Monasterboice Cross, and stands 13 feet in height by 4 feet across the arms. It is made throughout of Tipperary limestone from the sculptor's own quarries. The pedestal, which is very massive, is 4 feet in height, and the cross is 9 feet. The Celtic tracery on the panels of the cross is beautifully wrought, and includes the dragon and the well-known traceries from the Book of Kells. The monument reflects the greatest credit upon Mr. O'Shea. The inscription is in Irish and English.

Dublin.—The old church of St. Thomas, which had been closed for much-needed renovation and decoration, was re-opened on Sunday week, the preacher being the Lord Archbishop of Dublin, Dr. Peacock. The select vestry require £110 still to meet the expenses incurred.

We understand the Board of Guardians are prepared to receive tenders for repairing and painting the Dispensary Buildings at Tallaght. The work to be done in accordance with the specification of the Clerk of Works. Full particulars may be had at the Clerk's Office, James's-street; tenders are to be delivered not later than 11 a.m. o'clock on Wednesday, the 11th September, 1901.

The old Methodist Church in Lower Abney Street, Dublin has now been demolished, and rebuilding operations will be immediately commenced. The contract has been secured by Messrs. Thompson and Son, of Belfast, who have erected several churches for Methodist worship in Belfast and other places, and it is stated that the cost of the new church will be £6,000. The foundations are at present being laid, and it is understood that the architecture will be on the lines of leading Methodist churches in London, Manchester, and other cities. When completed, the building will be an ornament to the locality. Mr. G. F. Beckett is the architect.

Works executed at the Phoenix Park Distillery, Chapelizod, Dublin.—These buildings were erected by Wm. Dargan, of railway fame, in the year 1856, as a flax factory, and were acquired by the Distillers Co., Ltd., 12 Torphichen-street, Edinburgh, in 1878, who converted the premises into a distillery at a cost of between £30,000 and £40,000. In April, 1900, the services of Mr. H. I. Lundy, architect, 38 Dame-street, were engaged to re-construct the floors of the grain store, a building 62ft. by 45ft., five stories high. The new floors were carried out by Mr. Langley, contractor for foundations and woodwork, and Wm. Spence, Esq., C.E., Cork-street, Dublin, for cast iron columns and steel girders, the total cost being £1,500. On the morning of the 17th January last a serious fire broke out in the distillery, which completely gutted the milling portion of the premises, a building 105ft. by 45ft., five stories high and caused considerable damage to the adjoining mash house.

and other buildings. Strange to say, no other portion of the distillery was regarded as having any claims to be considered fire-proof except this building. The floors were supported on strong cast iron columns and girders, with brick arching between, supporting wooden floors. Stability was the main characteristic of the walls. The walls are about four feet thick at the bottom, tapering to 2ft. 6in. on top, a fact which makes it a rather unique building of its kind in the country. Notwithstanding their construction, the walls suffered considerably from the intense heat, and, on Mr. Lundy's advice, a large portion of the walls were taken down. The rebuilding and repairs are now completed to Mr. Lundy's plans. The successful contractors this time were John Good and Co., Ltd., Great Brunswick-street, for building floors and roofing; for ironwork, Mather and Son, Edinburgh; grain hoppers, Kelly and Son, Thomas-street; total cost, £3,000. The new floors are 18in. thick concrete on heavy gauge corrugated iron centering, and 1½in. flooring secured to tassels bedded in the concrete, and supported on cast metal columns and steel girders. The roof is very strongly constructed, and carries a considerable portion of the machinery. Four thousand feet of patent wired glass has been used in the new sashes, and the Luxfer prism electro glazing has been most successfully used in different portions of the building. Mr. Spence has reinstated the machinery, and the premises are now in full working order.

THE NUN'S RESIDENCE, SOUTH DUBLIN UNION.—Mr. James Byrne, in accordance with notice, moved that the nuns' residence be enlarged according to the plans which have been approved of by the Board on the 17th of July last; that the consent of the Local Government Board be requested for the execution of the work, and for the borrowing of a sum of £3,500, the estimated cost thereof, to be borrowed from the Board of Public Works, repayable by annual instalments spread over a period of 50 years. He said the resolution was merely formal, and was simply giving effect to the determination which the Board had come to some months ago. The resolution passed unanimously.

A few days since Bull Road, formerly known as Bull-alley, which for the past twelve months has been closed to the public, was formally opened. It is the first instalment of the improvements being effected by Lord Iveagh, in conjunction with the Corporation, in that congested district of the city. The new road, which is constructed over the old alley, has a uniform width of 45 feet, the old roadway having but 15, and runs between Bride-street and Patrick-street. The beautiful new park of St. Patrick's is being constructed on its southern side, and, when opened, will form an important addition to the open spaces or lungs of the city. It will extend from the Cathedral right up to Bull-road, and will be laid out with terraces, garden, and playgrounds, and only those who know the condition of the old buildings in this portion of Dublin can appreciate what an inestimable boon the park will be to the pent-up inhabitants of the rookeries around. On the northern side of the road all the old buildings formerly let out as tenement lodgings have disappeared, and in their place substantial four-storey buildings will stand. Each will comprise a shop and three-room buildings, and in the centre of the southern portion will be erected what will be much the largest concert hall in Dublin, with a frontage of over 240 feet. When effected, the entire improvements will add much to the value of property in this district, and will provide cheap and healthy dwellings to those who hitherto were compelled to inhabit the filthy, ill-ventilated, and unsanitary houses which formerly marked the site.

THE DUBLIN CORPORATION AND ARTISANS' DWELLINGS.—On the motion to adopt the report *re* the proposals to build artisans' dwellings on the canal bank, west of Rialto Bridge, Mr. Altman moved that it should be sent back to the surveyor for a revised set of plans on the same, more economical, basis of the Clontarf scheme.—Sir T. Pile thought there was something in the amendment. This was the Corporation's own land, and the scheme should go forward, but their officers had too large notions in building such dwellings.

In London, for instance, the County Council were content with 3½-inch partitions, whilst 9 inches were required here. —After some discussion the report was adopted.—On the motion to adopt a report of the Estates and Finance Committee, dealing with proposals to provide additional accommodation for members in the Council Chamber, and heating and ventilating it, the Lord Mayor said he did not think alterations in the structure of the Chamber were at present of such pressing urgency that they might not be postponed. As to heating and ventilation, Messrs. Edmundson had submitted a tender for carrying out such work as was needed for a sum of £79.—Mr. O'Meara did not believe anything worth while could be done for £79.—The report was adopted, with an instruction that Messrs. Edmundson's tender be accepted.

St. Thomas's Parish Church, which has been closed during the past two months for painting and much-needed repairs, was recently re-opened.

Drogheda—Repair of Courthouse.—There were two tenders for the repair of the Drogheda Courthouse from Mr. Stephen Henly, at £200, and from Messrs. Collins Bros., at £150. As the County Surveyor's specification and allowance were only for £50, the tenders were marked informal.—Mr. P. Byrne asked how many years this courthouse is built. The County Surveyor said eleven or twelve. Mr. P. Byrne thought it was curious it now requires so much repairs.

Enniscorthy.—Tenders will be received up to the 12th inst., for internal woodwork to roof, etc., and other alterations, to Catholic Church, Kiltalea, Enniscorthy. Tenders to be delivered to the Rev. John F. Kennedy, C.C., Kiltalea, Enniscorthy. Mr. J. Kelly-Freeman, M.R.I.A.I., 67 Eccles-street, Dublin, is the architect.

Ennis.—THE L.G.B. AND THE COUNCIL. — A special meeting of the Ennis Urban Council was held to consider a communication from the Local Government Board, returning, for the fourth time, the plans sent up for the erection of artisans' cottages in the town, for which the Council are applying for a loan of £2,650. In this letter the Local Government Board say that they were instructed by their chief engineering inspector, Mr. P. C. Cowan, that the plans were neither clear nor complete, and that the estimate of £148 odd for a small cottage was very high. They suggested that before advertising for tenders the Council should submit the plans to a consulting engineer and obtain from him a report as to what modifications and additions were necessary so as to secure comfortable dwellings at a moderate cost and avoid all uncertainty and dispute in connection with contracts. They further suggested that the Council might ask to be allowed to inspect the satisfactory plans recently approved in Limerick. A long and very animated discussion ensued, in the course of which Mr. Harwood said he did not see any use in sending up any more plans from Mr. O'Connor, their engineer, and he suggested to act on the letter and employ the Limerick architect to prepare the plans. Mr. J. F. O'Connor, C.E., said he would prefer the Council acted on the suggestions. He had no objection to their employing Mr. Peacock, of Limerick, because no matter what plans he (Mr. O'Connor) prepared—and he had carried out to the very letter what the Board required—they would not be received with favour. Everything would be accepted in connection with other works and Councils, but about this unfortunate business there was always a hitch, and something arising which he could not understand. He would resign all connection with this scheme, as he could not please the Local Government Board. Mr. Harwood proposed that the Council employ Mr. Peacock, Limerick, to prepare the necessary plans, etc. Mr. Honan, V.C., protested against employing any Limerick engineer while they had competent engineers in Ennis. Mr. Harwood explained this was simply to facilitate the work, as the Local Government Board seemed to like the Limerick plans. Mr. Roughan seconded Mr. Honan's proposition that an Ennis engineer be engaged. On a poll, four voted for having an Ennis engineer to prepare the plans, and five for a Limerick engineer. A deputation was appointed to inspect the Limerick plans.

Enniskillen. — Mr. Thomas Elliott, C.E., Enniskillen, submitted a plan of the workhouse infirmary building, showing certain alterations and improvements—suggested by Drs. Bigger and Henry—proposed to be made. The amount of the works was estimated at £217. It was decided to hold a special meeting of the Board to consider the matter.

Larne. — At a meeting of the Proposal Committee of Antrim County Council, held at Ballymena on 28th ult., Mr. George McFerran, J.P., proposed, and Mr. J. L. Turtle seconded, that the committee recommended the building of a sessions house at Larne—cost of site, £300; cost of buildings, £1,500; total, £1,800. Mr. J. P. O'Kane, J.P., moved, and Mr. John Houston seconded, that the application be rejected. Mr. O'Kane's amendment was carried.

Loughlinstown. — The Poor Law Guardians will, on the 18th inst., receive tenders for alterations to two new wards in the Workhouse Infirmary, Loughlinstown. Mr. P. F. Comber, C.E., 19 Lower Leeson-street, has prepared the plans.

Navan. — **THE WORKHOUSE IMPROVEMENTS.** — Mr. A. Scott, architect, Navan, wrote:—"After an inspection of the fever hospital on August 10th, upon which the committee reported, I accompanied the committee to the body of the house, accompanied by the matron, who strongly objects to the movable baths for the infirm wards. The matron states that the movable baths would be the most inconvenient to fill and empty and move about, that she has no help in the place to do such work, and that, in addition to this convenience, there would be no privacy. The doorways between the nursery and one of the infirm wards have three steps each, as well as an internal porch, to prevent the bath being brought in or out unless same were altered, and the matron for those and other reasons would request the Guardians to give her fixed baths and screened-off bathrooms. She also wants a lavatory basin in the corner of the nursery. The hot water to serve this bath is to be taken from the laundry on the male side. It would be necessary to put in a bath boiler at the back of existing fireplace in the nuns' day room, and to put up circulating cylinder to give a supply of hot water for the bath when required. The matron would prefer white enamelled fire-clay baths to cast iron enamel baths, same as I have recommended in my original report, and the same as we have put up in the casual reception rooms on each side of the house some years ago. The matron wishes to have a timber shade or screen put in the female bath rooms to screen the existing baths. There are two fires going on in this room, and the same in the male side, one for heating the room, and one for heating the water in a pan boiler cased in brick work. By putting the bath boiler at the back of the ordinary fire would serve both purposes, and the saving in coal would soon pay the cost of the bath boiler and circulating cylinder. The members of the committee who attended—Messrs. Rowan, Wilkinson, and Maguire—can further explain the matters touched upon herein. I have estimated the cost of the fireclay baths, drainage, hot and cold water supply, at about £65 or £70. If approved of by the Board, I shall immediately prepare the necessary drawings and specifications, and get an estimate from the contractor to lay before the Board."

The visiting committee made the following recommendations in connection with the fever hospital:—(1). "That two separate sleeping apartments for the nurses be made out of portion of the female top ward, and that the nurses' sitting room be made larger by the addition thereto of existing bedroom; a w.c. to be erected on this landing for the use of nurses only." (2). "That two movable patent earth closets be provided on ground floor, and the two existing closets on top floor be repaired and be made fit to receive patent earth closets if required." (3). "That two new 36-in. washing troughs be provided for laundry; skylight in roof also to be provided." (4). "That the entrance hall be re-floored with tiles." (5). "Roof and exterior woodwork, including window panes, doors, etc., to be repaired where necessary. Plaster to be repaired and walls coloured inside and outside."

Mr. WILKINSON said he supposed it was from the infrequency of anyone going into the place it had gone into dilapi-

dation. It was looked on as dangerous, but as there were no cases in it for the last two months, they did not feel the slightest fear in it. The whole wood-work has gone to wreck. It looks a regular barn. The sleeping apartments of the nurses is a tremendous big ward like a hay barn. He did not know how anyone could sleep in it in the winter.

Mr. MANGAN, in very flattering terms, proposed that the report be adopted.

Ennagh. — **TECHNICAL EDUCATION.** The *Ennagh News* says:—"The County Council for the North Riding of Tipperary have allocated a substantial sum from the rates for the equipment of a Technical School and Schools of Manual Instruction and Science in Ennagh, and the Agricultural and Technical Departments have granted an equivalent sum. This institution and its management have been entrusted to the Christian Brothers, and already the work has been commenced, and is making rapid progress. One department of the new building is well forward towards completion, and will be a substantial and imposing structure. It will be 65 feet in length and 24 feet wide, with elevation in proportion. The building will be divided into two parts, one for the purpose of a physical and chemical laboratory, and the other for manual instruction (trades, etc.). Building construction, in addition to other useful crafts, will be taught by duly qualified and thoroughly efficient instructors. The buildings are being erected by Mr. Dooley, contractor, in accordance with plans provided by Mr. R. P. Gill, C.E., and are expected to be completed by the end of October."

Omagh. — **THE NEW POST OFFICE.** — We understand that the Treasury has finally agreed to the exchange of sites with Mr. Robert Adams on which to erect a new post-office. During the past week one of the surveyors from the Board of Works was in town taking measurements of the site, and it is stated that the erection of a new office to cost about £7,000 will be commenced.

THE MORTUARY CHAPEL. — A letter was received from the Rev. Canon Hayes stating he understood from the architect that there were one or two details in regard to the Protestant Mortuary Chapel which had not been provided for, and he would suggest that the clergy who were to use the building should be given an opportunity of seeing the arrangements, and whatever was wanting could be supplied at a small cost. Mr. Anderson said the report was against making any alterations, and he found that there were alterations made and authorised by their surveyor which he had no right to do in the absence of any order from that Board. There was no doubt that alterations had been made, and he held that the surveyor had no right to act on the suggestion of any man—a clergyman or a layman, or any member of that Board, without it coming up regularly before the Council in the usual way.

Rathdown. — **NO. 2 RURAL DISTRICT COUNCIL.** — The Rathdown No. 2 Rural District Council will, at their meeting to be held on Wednesday, the 11th inst., consider tenders for the erection of five labourers' cottages, in accordance with the plans and specifications prepared by Henry Powell, Esq., C.E., Architect to the Council. Mr. Patrick Cunnam is the Clerk to the Council.

Sligo. — The Catholic Workhouse Chapel is now in progress of building, while the Protestant Church will shortly be begun. Mr. T. M. Deane, A.R.H.A., is the architect, and Mr. D. W. Morris, of Dublin, is the surveyor. The designs in both cases, while appropriately simple, are yet pleasing in character.

Waterford. — In Waterford City the Christian Brothers propose to erect a Technical School at Mount Zion, costing £5,000. The matter is under consideration.

The King is having thirty or forty substantial and commodious cottages built on the Crown land at Old Windsor for labourers on the Royal estate. The men have been paying five and six shillings a week rent for houses owned by private persons, but the rent of the King's cottages will be only half-a-crown a week, with the stipulation that no lodgers



Carlow—The U. D. C. will consider tenders for painting the external work of the Town Hall on the 27th inst. Mr. James Kelly is the Town Clerk.

Dublin.—**DUBLIN MAIN DRAINAGE SCHEME.**—THE SYPHON UNDER THE LIFFEY. — This great undertaking, perhaps the heaviest in connection with the main drainage works, is being proceeded with actively from the Burgh Quay side of the river, directly opposite Hawkins-street, at which point, as well as at the corner of Townsend-street, excavations similar in depth to those already effected by the contractors, Messrs. H. and J. Martin, at Burgh Quay, are in progress. At the latter point the excavation is some 56 feet, or more than 25 feet under the bed of the river, and for some time past workmen have been engaged in the arduous task of tunnelling for the reception of the huge syphon which will convey from the Marlborough-street side of the river the sewage of the northern district, and which will be conveyed thence to the depot at the Pigeon House. We understand that the tunnelling for the syphon has been successfully executed for 20 feet from the Burgh Quay side, and with all the energy that the contractors are applying to the carrying out of this great section of the main drainage works, it is hardly likely that the Liffey will be crossed and a connection effected with the northern sewage works in less than a year and a half, or perhaps longer, from this time. When all is in working order the main drainage of Dublin from all points will be as perfect as any in the best-appointed city of the United Kingdom.

Dundalk.—**WORKHOUSE SEWER.** — The Local Government Board wrote that they had no objection to the works proposed to be carried out in connection with the workhouse sewer, as shown by specification and plans forwarded to them for inspection.

Kilmore (Co. Wexford).—At their last meeting the Wexford County Council had under consideration the serious condition of Kilmore Harbour and breakwater. It was pointed out that a sum of £1,000 at least was required to put the breakwater and harbour generally into a fair condition. The council then appointed a deputation to wait upon the Department of Agriculture and Technical Instruction. The deputation was received by the Department. The members were introduced by Sir Thos. Esmonde, M.P. Sir Thomas explained the object of the deputation. Mr. Ennis, J.P., dwelt on the importance of the harbour to the people of that district, particularly those connected with the fishing industry. He said the fishing industry at Kilmore employs 27 boats. Kilmore Harbour, if improved and deepened, should rapidly become one of the most important centres of the Irish fishing industry. Others having spoken, Mr. Plunkett, in reply, said that he had listened with the deepest attention to the able statements that had been made, and he promised to help as far as was in the power of the Department. He looked also for assistance to the Board of Works, and whatever expense was gone to, he thought the County Council should contribute a portion, be it more or less.

Larne.—At the monthly meeting of the Larne Urban District Council a letter was read from the Local Government Board with regard to the sewerage of the town, and enclosing extracts from the Local Government Board's engineer's (Mr. Cowan) report on the matter. The Local Government Board requested that the Council would give that very important matter their early attention. The references to the necessity for a complete scheme did not please several of the members, but it was agreed to consider the matter at the next regular meeting.

Lurgan.—The report of the Medical Superintendent Officer of Health (Mr. Samuel Agnew, M.A.) for the year 1900 has just been issued. It contains the following:—"The number of births registered was, with one exception, the largest of any year of the decennium—viz., 404; in 1889 407 were registered. The birth-rate was, accordingly, 35.3; compared with 31.2 in 1889, and 31.3 in 1898. The number of deaths registered was 280, giving a death-rate of 24.5, compared with 22.3 in 1899, and 20.6 in 1898. This high death-rate was brought about almost entirely by the large number of deaths which occurred during the first quarter of the year in consequence of a very serious epidemic of influenza. Of the 280 deaths registered, 62 were those of children in their first year, and 84 were of persons who had lived at least 60 years. Only 16 deaths resulted from zymotic or preventable disease, compared with 20 in 1899, and 32 in 1898. Thirty-seven deaths were due to phthisis, and 70 to disease of the respiratory organs. I have repeatedly been obliged during the year to draw your attention to the serious nuisance caused in many instances by the existence of midden privies, which had been allowed to get into such a condition as to constitute a source of danger to the public health, and in all these cases I recommended that properly-constructed water-closets should be substituted. The Council having adopted my recommendations, I am happy to state that, in nearly all cases, the alterations were carried out without any friction, and palpably to the great improvement of the different properties affected. In only a few instances were we obliged to ask for magistrates' orders to enforce the changes, and, with one or two exceptions, these were granted. During the year some 260 additional houses have been provided with the town water, so that now more than half the total houses in the town have been thus supplied. This is very encouraging, inasmuch as the large majority of these houses have been connected in obedience to notices served on the owners by the Council for the providing of water-closets instead of the ordinary midden privies. The daily quantity of water used has been about 200,000 gallons, or about 17 gallons per head of the population per diem, so that the pumps were obliged to work, on an average, nine hours daily. Our opinion frequently expressed regarding the character and suitability of the lough water, when filtered, for a town supply, has been fully borne out by experience. It undoubtedly is an immense boon to the inhabitants that such an inexhaustible supply of first-class water should be at their service; and now that the cost of obtaining it has been fined down until it has ceased to be a serious burthen on the rates, I think that both the old Commissioners and the new Councillors are to be congratulated." Dr. Agnew also dealt with other matters in his report. A report on the sanitary circumstances and administration of the Lurgan Urban District has also been issued by Dr. J. C. Clibborn, Medical Inspector, Local Government Board, in the course of which he states:—"The cost of the water scheme was £28,000, imposing at first a burthen on the rates of 2s. 3d. in the pound, but this burthen has been gradually diminishing, until it is now reckoned at 1s. 5d., and every person seems thoroughly satisfied that the value obtained was well worth the cost. The water has only 6 degrees of hardness (Clarke's scale), and, when filtered, is a clean, wholesome water. Great improvement has been made in the construction and surroundings of the houses occupied by the working classes since I made my first inspection of this district some years ago. It has been the aim of the sanitary authority that each house should be provided with a separate enclosed yard, containing separate privy accommodation and a properly-constructed ashpit. With very few exceptions, and these confined mainly to the outskirts of the town, nearly every house has been so provided, and during the past two years a still further important and desirable step has been taken in the endeavour to secure that each of the yards is properly tiled or concreted, and provided with a suitable gully-trap and house drain communicating and properly connected with a public sewer, and that as far as possible the ordinary midden privy should be converted or replaced by a properly-constructed water-closet and dry ashpit. The great improvement that has been effected in the sanitary condition of the town could only have been brought about by the continuous oversight of the different officials. The Medical Superintendent Officer of Health, Dr. Agnew, has a keen and intelligent interest in the sanitation of his district, and the Urban Council support him in every way. The powers vested in the Council by the Public Health Acts have been evidently firmly and judiciously used, and the result has been a condition of matters which, I am sorry to say, is not always to be met with in provincial towns."

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NOTICE.

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No. 1001

Clonmel Again!

CLONMEL seems to be working up quite an unenviable notoriety for professional proceedings of a distinctly questionable character. This time the arena is the Workhouse, and the Board of Guardians of the Poor the champions whose deeds we have to sing. Our readers will doubtless recollect that for a considerable time past it has been shown to be essential that the sanitary arrangements of the Workhouse should be remodelled in accordance with modern notions of sanitation. The then Board of Guardians appointed the County Surveyor, Mr. E. Hackett, to devise a scheme. This scheme was duly prepared. Quantities were made out by a quantity surveyor, whose identity does not appear to have become known to the Guardians until a few months ago; then the Clerk reported that it had been discovered in the person of the architectural adviser to the late Board of Control, and adviser on matters connected with asylums to the Local Government Board, the Poor Law Board's own Surveyor—Mr. Gardner!!! This discovery created not a little astonishment, particularly as the L.G.B. was pressing the Board to go on with the sanitary annexes and other works. (Why?) The next phase was that the Guardians desired the preparation of a further scheme of sanitary works, estimated to cost £3,500. Again the County Surveyor was to the front, and submitted a design, which was, in due time, sanctioned by the L.G.B. Mr Hackett having suggested the appointment of a Surveyor, Mr. Gardner's name again came before the Board. The suggestion was thereupon thrown out that Mr. Gardner should—following the example of Mr. Fuller at the Lunatic Asylum in Clonmel, and in consideration of being again employed—credit the Guardians with any emoluments that were his on foot of the derelict scheme. Apt illustration of the saying that "the evil which men do lives after them," for we presume the results of that bargain will be that public boards will consider their architects and surveyors in duty bound to prepare twenty tentative schemes free, gratis, and for nothing. A discussion took place, and consideration of the matter was again adjourned.

Now, the circumstances revealed are so curious, and, happily, so unusual, that a little publicity may not be altogether undesirable. In the first place, the employment of the County Surveyor on such works is an injury to the rate-

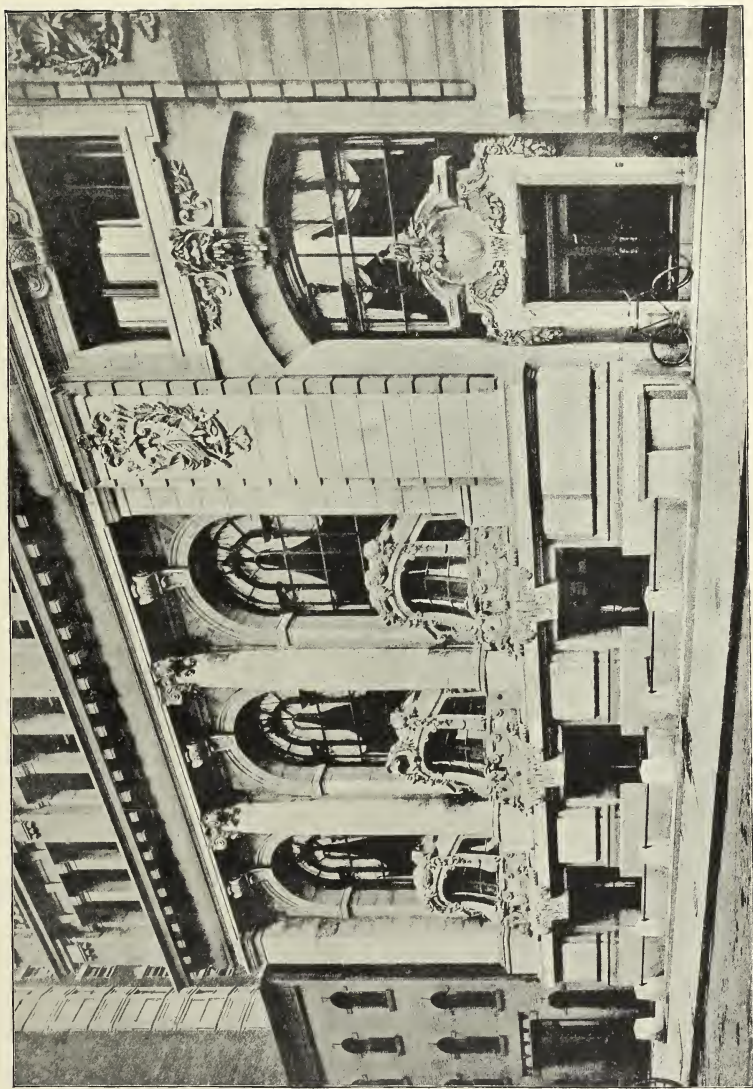
payers of the county whose salaried official he is, and is further, as so many of our readers have reminded us, a grave injustice to private practitioners. But it is the employment of an official of the L.G.B. as Quantity Surveyor, which, to our mind, constitutes the really serious scandal of this case. Not alone is it a most reprehensible proceeding that officials of a public board should be permitted to enter into competition with private surveyors; but that it should for one moment be tolerated that such an official whose office is to advise on, and even revise the work of private practitioners, architects or surveyors—a gentleman whose everyday duty places him in a position of almost arbitrary authority over the work of such men—should be a competitor with them for the work of quantity taking, amounts to nothing less than a gross scandal. There is too much of salaried officers who receive a handsome stipend to devote all their knowledge and their energy to the benefit of the public, who retain them to supervise, and not to compete. We say there is too much of their competition with the regular professional man, whose works they are supposed to supervise; and why? For one reason alone it is bad, and that reason alone should condemn it. We mean it is only in human nature to employ those whom the "public" officer would be thought to favour. What a vista this opens needs no words of ours to paint.

We do not mean to suggest that Mr. Gardner would, in reviewing the work of his fellow surveyors, be influenced by the fact that every one of them is a possible rival in the case of any given job, but we do say that such a conjunction of circumstances is, to put it plainly, unseemly, and we venture to express the hope that it may be the last time such a thing shall occur.

THE Editor of *A. A. Notes*, the official organ of the London Architectural Association, observes in a recent issue:—"Why is it that the A.A. Annual Excursion is not attended by larger numbers of members than it is? Several of those who know from experience the value of the excursion, both from an architectural and social point of view, attend year after year and wonder that the full complement of thirty members is not always made up. This year there are only twenty-four, and, even of these, some are not members of the A.A., and are only allowed to join out of courtesy. A more enjoyable holiday, from an architectural point of view, it would be hard to imagine. Many places of great interest are visited to which it would be difficult, if not impossible, to obtain admission otherwise, and drives through beautiful country form part of the daily programme. New districts are yearly explored, and the whole week is so well arranged by our able hon. secretaries, Mr. W. Talbot Brown and Mr. A. W. Hennings, that the ordinary petty worries of a holiday are entirely absent to the individual members of the party; and, judging from the numerous sketches made, the holiday should be of the greatest value to the more advanced student. We shall hope to give the usual illustrated account of the excursion in our next issue." We can heartily endorse every word. To Irishmen in particular, whose own country does not provide such a wealth of rich architectural fare, these trips are a splendid source of architectural enjoyment—in fact, an inexhaustible well from which an ever-growing knowledge of form and character in architecture may be drawn. And every Irishman who has been privileged to join can bear ready testimony to the kindness of his welcome on all hands.

Bull Road, *nee* Bull Alley.

A FEW days since, Bull-road, formerly known as Bull-alley, which for the past twelve months has been closed to the public, was formally opened. It is the first instalment of the improvements being effected by Lord Iveagh, in conjunction with the Corporation, in that congested district of the city. The new road, which is constructed over the old alley, has a uniform width of 45 feet. The old roadway was only 15 feet, and runs from Bride-street to Patrick-street, with a gentle gradient. There are eight perches of new road, splendidly constructed. The beautiful new park of St. Patrick's is being constructed on its southern side, and when opened will



THE NEW PREMISES OF THE NEW YORK YACHT CLUB.
VIEW OF THE PRINCIPAL FACADE.

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

form an important addition to the open spaces or lungs of the city. It will extend from the Cathedral right up to Bull Road, and will be laid out with terraces, garden, and playgrounds, and only those who knew this disreputable locality in the past can appreciate what an inestimable boon the park will be to the pent-up inhabitants of the rookeries around. The park takes in Canon-street and Patrick's Close, North, and shelves down gradually to the base of the Cathedral, which it will lift apparently some ten feet up out of the present well it is buried in, thus showing its grand proportions in a manner undreamt of by any inhabitants of Dublin since its formation. On the northern side of the road all the old buildings formerly let out as tenement lodgings have disappeared, and in their place substantial four-storey buildings will stand. Each will comprise a shop and three-room buildings, and in the centre of the southern portion will be erected what will be much the largest concert hall in Dublin, with a frontage of over 240 feet, with the finest organ in Dublin. When effected, the entire improvements will add much to the value of property in this district, and will also provide cheap and healthy dwellings to those who hitherto were compelled to inhabit the filthy, ill-ventilated, and unsanitary houses which formerly marked the site.

One little touch of comedy. At 12 o'clock, noon, the road was opened, and at 12.15 o'clock, p.m., a six-foot-tall policeman passed up it, followed by two small urchins, carrying a dog in custody. To him, a street arab, who was sitting on the hoarding, yells:—"Hi, Mister, you should get the war medal for taking the first prisoner up New Bull Alley!! The bobby chased—the *gamin* vanished.

CARPENTERS STRIKE.

Seven members of the Limerick branch of the Amalgamated Society of Carpenters and Joiners were arrested on information sworn by Mr. Michael Gough, builder, charging them with alleged conspiracy and assault. The accusation against the accused was that they forcibly entered complainant's premises at Clonlara, County Clare, assaulted complainant, and forcibly removed a man named Patrick Loneragan, complainant's employee, and did also threaten to burn complainant's premises at Clonlara. The men charged were John Byrne (Clonlara), John Moloney, James Reddan, Jeremiah Cronin, Patrick Kennedy, and John Hynes (Limerick). The accused were brought up at the police court on Friday, before Mr. A. Hall, and the case was remanded to next Petty Sessions at Clonlara. In connection with the case, Mr. Gaffney, solicitor, has addressed a letter to Mr. Corrigan, delegate in Limerick for the central body of the Amalgamated Society of Carpenters and Joiners, stating that on behalf of the master builders of Limerick, legal proceedings would be instituted against them for damages, following the decision of the House of Lords in the famous Taaf Vale Railway Company against the Amalgamated Society of Railway Servants. The Limerick carpenters, it may be stated, have been on strike for some months past for increased wages.

Electric Illuminations for the Czar's Visit to France.

In connection with the extensive electrical illuminations which are being prepared at Dunkirk and at the Compiegne on the occasion of the visit of the Czar of Russia to France, it may be of interest to observe that the illumination devices on the E.L.B. system are being provided by the Paris representatives of Electric Lighting Boards, Limited, of 7 Pall Mall, on a very large scale. The new Town Hall, which is to be opened by President Loubet, and other public buildings at Dunkirk, are being entirely illuminated on the E.L.B. system, and at the Compiegne alone, where the Czar will be residing for a few days, the approaches to the Castle are being illuminated by devices requiring no less than 7,000 lamps.

STONE AND WOOD FOR BUILDING.

DETERIORATION OF TIMBER.

According to a recent article in the *Morning Post*, by Mr. W. E. Martin, neither porosity nor weight, nor resistance to strain nor chemical composition is alone to be considered in judging the durability of a building stone. A series of experiments conducted by the writer has convinced him that the physical condition in which the component minerals exist in a stone has much to do with its durability, and, taken into consideration with the various properties enumerated above, it has everything to do with it. The ring of a stone under a chisel struck smartly with a heavy mallet is a good index as to its weathering properties, for it tells of the physical condition in which the materials exist in the stone; and an intelligent workman being, consequently, in an unique position to decide on the goodness or badness of any stone which may pass under his hands, he should be relied on in this matter by whoever takes an interest in erecting a durable building.

Less, he remarks, is known of the structure and properties of timber than of any other material which passes through the builder's hands. This ignorance is frequently shared by the architect, who is apparently indifferent as to whether the wood used under his superintendence is likely to last a reasonable time or perish by premature decay. When about the beginning of the sixteenth century the use of oak was gradually being abandoned in this country, hewn pine logs, cut from large trees grown in provinces bordering on the Baltic, were imported to replace the home-grown timber. This has since completely superseded oak in all our public and private buildings, but when it was first introduced great prejudice existed against its use, for workmen could not be made to understand that a roof of it would answer the purpose nearly as well as oak, and be much cheaper. True, now that the tide of public opinion has set the other way, no one thinks of using oak, except occasionally in churches, any rubbish shipped from Sweden, Russia, or Canada, being good enough for the jerry-built structures found in all our towns.

To gauge the change in this respect one has only to try to realise what the difference is between a piece of "heart of oak" and an "inferior fifth" quality of Swedish deal, a by no means uncommon class of building timber at present. Soon after the removal of the timber duty (in 1866) the country was flooded with foreign-sawn scantlings, chiefly planks, deals, and battens, which varied in size from 1 in. by 4 in. to 7 in. by 2½ in., and these largely displaced the logs hitherto sent, for the saved sawing and were, consequently, cheaper than the same sizes cut from logs here. This flood of foreign-sawn timber continues to increase, while the sizes of scantlings diminish, and the quality of the timber goes from bad to worse. Logs of reasonable size must be cut from well-grown large-size trees, but a 4 in. by 2 in. rafter can be, and is, cut from a scaffold pole nearly all sapwood. On many scantlings, including flooring boards, the bark may be seen where the corners are "waney" and do not hold the full-size specified, which is another growing fault with these imported pieces. In fact, this marked deterioration of foreign-sawn timber is so well known that it is rigidly excluded from many important works, and such timbers only allowed which are cut from large logs especially selected as free from sap, shakes, and large knots.

OUR ILLUSTRATIONS.

THE NEW YORK YACHT CLUB.

In view of the exceptional interest taken in the International Yacht Race, we think an illustration of the headquarters of the yachting world in New York will be of interest to our readers. The character of the work is not only typical American, but there is an interesting reminiscence of the cabin fittings and richly-carved stern of a fine old three-decker about the detail.

In our next issue we shall publish a detail view of one of the bay windows.

QUARRYING.

By J. T. REA, F.S.I., M.R.I.A.I.

The following article has been occasioned by the writer's observations of recent blasting operations, as well as by his experience of the methods of quarrying practised around the city where he served his architectural apprenticeship, and it is hoped the information may prove interesting, if not useful, to the readers of this journal.

The subject naturally falls under two heads: The quarrying of soft stone, and of hard stone, or, more definitely, the quarrying of freestone and of granite.

FREESTONE.

After the "cap-rock" or "stripping" soil covering the building-stone deposit has been stripped off, either by blasting or otherwise, the area thus laid bare is quarried in one of three ways—by hand tools, by explosives, or by channelling and wedging.

Hand Tools

are used when the stone is of an inferior quality, thin and friable. They comprise the pick, crowbar, steel wedge, hammer, drill, and plug and feathers, the operator grasping it with one hand and using the other to strike it with a hammer, rotating the drill between each blow. The plug and feathers are employed for splitting unstratified rock, by inserting them in a row of holes, about $\frac{3}{4}$ in. in diameter, and a few inches apart, along the proposed line of fracture, and driving them all together, when the stone will crack with the trace thus indicated. These instruments consist of a steel wedge, $\frac{5}{16}$ in. x $\frac{3}{4}$ in., and two curved half-round pieces of malleable iron, $4\frac{1}{2}$ in. x $\frac{3}{4}$ in., forming three to a set, the plug being forced with the hammer between the feathers till the desired cleavage occurs.

In the Bath district the building stone is never blasted because of the tendency to shatter and waste. It is sawn *in situ* by means of a one-handed saw, the blocks so divided being lifted from their beds with the aid of iron bars. Subsequently, any rough surfaces thereon are shaped by means of a two-edged quarry axe.

As a large portion of Bath stone is procured from mines, underground tunnels or shafts are first sunk, and the material removed from thence by jad picks, four lengths in the handle, viz.—2ft. 6in., 3ft., 3ft. 6in., and 4ft., used in turn as the stone is picked away from the ceiling of the quarry to make a passage for the "frig bob," or one-handle saw, to cut it into blocks, which are torn from their bottom beds by wedges, and then finally removed by long steel bars, lewis, and cranes, the latter at the top of the heading for haulage purposes. In sawing underground, water is always used, not so much that it makes the stone softer along the line of cutting, but because it washes out the dirt made during the operation, and thus frees the cut of obstruction.

During a short stoppage at Bermuda the writer noticed that the stone there was so soft that it was simply sliced out of the quarry by an ordinary cross-cut saw, and that the reveals of doors and windows dressed with this material were afterwards cut smooth with a carpenter's hand-saw. The stone, however, hardens on exposure, and serves its purpose very well.

Explosives.

Blasting should be avoided in obtaining building stone, as it shakes the material and causes waste. It is, however, the cheapest method of quarrying small blocks, though large ones are often procured by the same means. Holes of an inch and upwards in diameter are first pierced in the rock to the necessary depth with boring bits, jumpers, or machine drills. The boring bit is a short bar, or drill, held by one man, who turns it between the blows of another man's hammer, while the jumper is a heavy iron bar, with either a chisel-shaped or spiked joint, and sometimes with a weight attached to it about 2ft. from one end, to give greater impact to its descent. The jumper cuts by its weight alone, the workman letting it drop, and twisting it in the aperture after each rebound or jump. Machine rock-drills, driven by steam or compressed air, are engaged in works of magnitude where they are rapid and effective.

The hole, when completed, is largely filled with coarse-grained gunpowder, dynamite, or other explosive, and the remaining space rammed with dry clay, sand, or chips of rock, called "tamping." The firing fuse may be protected by a groove in a piece of wood, or by a tube, and should burn at the rate of about 1yd. per 70 seconds, Tangy's or Bickford's fuse, costing from 2d. to $4\frac{1}{2}$ d. per fathom, being very serviceable.

As stone is invariably shattered by heavy blasts, repeated light charges are preferable for detaching without disint-

egrating. A cubic yard of solid rock in ordinary quarrying will require $\frac{1}{4}$ lb. to $\frac{3}{4}$ lb. of powder; and the explosion starts a mass whose volume approaches the cube of the line of least resistance, which is the shortest distance from the charge to the surface.

Electricity is convenient to explode several charges simultaneously, and for great blasts indispensable.

Channelling and Wedging.

This mode of quarrying is adapted to rocks lying in layers, and possessing certain planes of cleavage, along which they readily split, or to stone that is too hard to break up with the ordinary hand tools, but not so tough as to necessitate explosives.

Rock in the former state is easily cleft by running narrow channels along its line of bed, and inserting and driving a series of steel wedges. Rock-drilling machines are frequently made to cut these grooves, being mounted so that they can be moved forward as the work proceeds.

Blocks of harder unstratified stone are loosened by channelling as before, and sinking rows of "pool-holes," as may be found necessary, either with the boring-bit or jumper. Into these orifices steel gads and wedges, 4in. to 6in. long, are impelled with the hammer, the process being termed "gadding and wedging"; or plug and feathers may be requisitioned if the material be not too refractory.

This method is economical and expeditious for large masses, except in granite and the largest rocks.

GRANITE.

As granite is too hard to be quarried by hand tools, it is procured by explosives and by wedging, the former process being usually reserved for smaller pieces, and the latter for large blocks.

Explosives.

The present system of blasting Aberdeen granite is to bore a succession of holes from 2in. to 4in. in diameter, according to the depth of the bed, which may range from 3 to 30 feet, introducing charges, and firing them together by electricity. This starts a big mass, and in the resultant crack or fissure considerable quantities of gunpowder are exploded to thrust out the "piece" from the "face." The above plan admits of large stones being refit from the rock, with less chance of their sustaining damage.

Wedging

is then resorted to for the purpose of splitting the portions thus thrown down into the sizes wanted. Small steel wedges are driven into the stone by hammers, at distances from 3in. to 6in. apart, dividing the material with great celerity and little friction. Large lumps are also detached by gadding and wedging, as previously described, and, although, strictly speaking, granite has no planes of stratification, it possesses distinct lines of cleavage, and can be worked equally well in any direction.

The Egyptians are believed to have obtained their granite by inserting a row of wedges of dry wood into notches made for the purpose, and then causing the plugs to swell by pouring water over them, which burst the blocks from the face of the quarry. Another effective method adopted by the ancients was to kindle large fires on top of the rock until it became heated, and then suddenly chill the surface by throwing water upon it. This split the stones into lines of natural cleavage, after which it was broken up as required. Granite is almost always worked and polished at the quarry, as the gain on the cost of labour and carriage for quarry-worked stone is considerable, the expense of the transport of the waste material being saved, except for the difference between the railway rate for worked stone in block. It is also easier to square and dress the stone while it contains the ground or "quarry-sap," and local men being more accustomed to it, the conversion is better and more economically performed. This quarry-sap should, of course, be allowed to dry out, to season the stone before commencing building operations, and in this connection it may be interesting to note that Vitruvius recommended that stone should be allowed to lie two years before being used, so as to permit the natural sap to evaporate, while Sir Christopher Wren specified three years' exposure on the bench for the stone for the erection of St. Paul's.

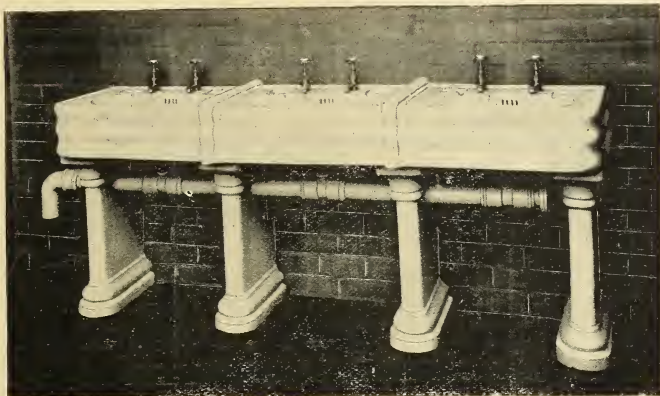
MARBLE.

In quarrying Derbyshire marbles only the rough stone is blasted, good blocks being levered from the face of the workings by plugs and feathers.

Drilling is done by hand only, and the rate of penetration, two men striking, is about 5ft. per hour for a hole $1\frac{1}{2}$ in. in diameter. The material does not split very easily, though the grain is tolerably uniform. The famous Carrara marble is quarried by dynamite.

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FORM OF BLOCK.



CLEANING PAINTED WOODWORK, ETC.

Potash and hot water is a very good thing for cleaning painted woodwork. It must be applied with a scrubbing brush, and plenty of elbow grease applied at the same time. This means plenty of unskilled labour, which can be done by a labourer. The potash will bring away all the paint without damaging any of the mouldings or other ornaments with which the woodwork may be adorned; if it is used very strong it may raise the grain of the wood a little.

A paste paint solvent may be used for the same purpose, which is made from putty lime, soft soap, and a strong solution of common soda or potash. Equal quantities of soft soap and newly-slaked putty lime are mixed together with a large palette knife on a flagstone; to this is added one-sixth of the weight of the combined soft soap and lime and soda dissolved in as little water as possible; the whole is then beaten up so as to form a stiff paste. Dry whiting is added to stiffen it if too liquid. The paste is applied to the paint with a trowel or knife if the surface is flat, but for moulded work, &c., a stiff brush is best. This solvent may be put on overnight, and the work can be washed clear of all old paint the next morning with warm water and a stiff brush; it is better to scrape off the thickest of the stuff, and wash down afterwards. It is always advisable to give woodwork cleaned down by this process a coat of thin patent knotting, to prevent the alkali that has soaked into the wood from afterwards coming through and destroying the new paint that is applied. Patent knotting may be thinned with naphtha. It is not safe to paint woodwork that has had the paint taken off by means of any alkaline composition without taking this precaution. When this has been done, the painting may be proceeded with in the usual manner.

If it is not intended to go to the expense of cleaning off the old paint, the surface should be scoured with soap and water; if it is very smoky and greasy, it should be washed with limewater, and when dry be rubbed down with sand-paper or pumice-stone. All necessary repairs should be made, cracks and openings should be stopped with putty, and portions from which the paint is blistered or knocked off, should be brought up to the general level by painting. When this is quite dry, commence the painting with the second coat.

When painted woodwork is not too far gone it can be freshened up with a coat of varnish; before re-varnishing, the work should be well cleaned. Fuller's earth is a good and cheap article for this purpose. Occasionally, painted work is badly marked by knocks, kicks, &c.; these can be easily removed with powdered bathbrick, rubbed on the marks with a piece of wet felt or other suitable material.

To clean white marble, mix a paste made of potash and coat the marble with it. Allow the paste to remain on for a day or so, and then wash off with hot water and soap, finishing with plenty of cold water. In the case of very old and discoloured marble, it may be necessary to repeat the process more than once.

—: o: —

Of the picturesque quality of smoke, not when it leaves chimneys of somewhat diminutive stature in a black cloud, but when it has softened the lines and smoothed away the newness of state buildings, there is something to be said. But the smoke nuisance in London is a different matter altogether. The annual report of the Public Control Department of the London County Council, which has just been issued, devotes an entire section to this matter, and it is evident from the report that the nuisance is not so grievous as some people imagined. It had been supposed that the decay of the stonework at Westminster Abbey and at Lambeth Palace was due to smoke from the Lambeth Potteries, which is highly charged with hydrochloric acid. An analysis of the decaying stones has proved, however, that they contain not more than a normal quantity of the acid. This is the more satisfactory, as the Act of 1801, which deals with smoke as a nuisance, is inoperative where the smoke is not black, although some of the most dangerous gases are viewless to the eye.

CORRESPONDENCE.

WORKMEN'S DWELLINGS—WATER AND DAMP-PROOF FLOORS FOR KITCHENS AND SCULLERIES.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR.—With reference to the May number of your excellent journal, I would bring to your notice, for the favourable consideration of our "Health Pioneers," the following suggestion, with a view to its insertion in your next issue. It is as follows, viz.:—During my twelve months' service as "Assistant Buildings Inspector," under Mr. Jos. C. Brelland, C.E., I observed in the construction of artisans' dwellings what I consider to be a very grievous, yet an easily obviated constructional defect—it is the damp, cold, unhealthy tiled floors of kitchen and parlour houses, in many cases built upon "made ground," and by all upon the cold clay common to the soil of Belfast. In low-lying districts such as the "bog meadows," and other flat sites, these tiled kitchen and scullery floors are a very evident source of disease amongst children, more especially infants who, unable to walk, sit on these damp, cold floors, and contract colds and other diseases. After leaving the Corporation employ I was employed as a contractor's foreman of works at the new fortification in course of construction for the defence of Bantry Bay, and for the first time in my life supervised what, however, is common enough to War Department buildings, a "waterproof" and "damp proof" floor. It is constructed as follows, viz.:—A layer of three inches of Portland cement masonry is first laid down; upon this is laid a zin. layer of Portland cement concrete, composed of one part of cement and four parts of "breeze." Again, on the top of this is poured (after it is properly set) a coating of coal tar, pitch, and slacked lime, boiled until the naphtha has evaporated, then common deal floor boards are nailed down whilst the tar is fluid, into the "breeze concrete," which, in point of fixity, resembles wood from its porosity. You will readily see, Mr. Editor, that you have now both a damp-proof floor from beneath, i.e., from any water in the soil, and equally waterproof from above, i.e., from the process of washing down the floors. The whole thing is quite economical, and if a clause was added in our bye-laws for the actual enforcement of all workmen's dwellings, in their kitchens (and I would also add, sculleries, where the poor "domestic slave" stands and does the family washing) to have such a waterproof floor constructed, I believe much sickness and disease would be avoided, and the rooms in question be cleaner, and also much warmer and dryer for the children, and there would be no need of oilcloth nor carpet.—I am, sir, your most obedient servant,

E. T. COOPER,

Ex-Buildings Inspector, Belfast Corporation,

33 Enfield-street, Belfast, June 7th, 1901.

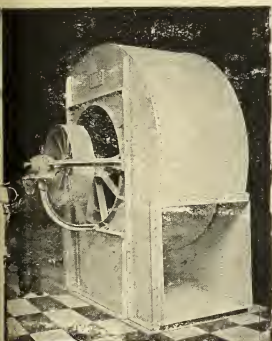
[We are sorry to learn that Belfast Artisans' Dwellings are so carelessly constructed. But we fear Belfast has achieved somewhat of a notoriety for jerry building. The method of laying breeze concrete floors described by our correspondent is a very common one, by no means confined to the War Department. Fully fifteen, if not twenty, years ago certain Dublin contractors were using it with success. The other day we saw a floor laid over 15 years, which had withstood heavy traffic during all that time, and not a single board had moved. If this method of flooring is adopted it is better not to use kiln dried flooring, as it is liable to "buckle," or twist. The Dublin bye-laws, in common with most others, do contain a clause requiring the use of not less than 6 ins. of concrete to be spread over the entire site.—ED.]

THE TOWER OF PISA.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR.—In your current issue we learn that this celebrated Campanile was erected about the year 1150 by the German architect, Wilhelm, of Innsbruck, and that it is about 15 feet out of the perpendicular. Thirty-seven years ago I very well remember climbing this tower, the marble steps by which the ascent is made being of the easiest incline of any of the same sort I know in Christendom. On referring to my diary, I find that, at that time, I noted the tower was

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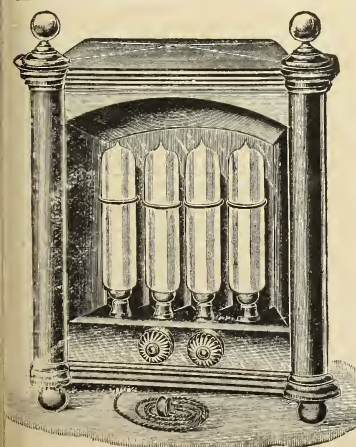
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considered to be the mutual work of Gudielmo, a German, and Bonanno, of Pisa; that it was built about the year 1174, is nearly 190 feet high, and is 13 feet out of perpendicular. My authority, I see, for that entry was Starke's "Travels in Europe," published by Murray in 1832. I had not visited the tower again until Friday, the 28th of last June, when I spent two hours, during a blazing hot morning, upon the top of its uppermost storey. As I sat there, after an interval of nearly 40 years, chatting lazily with the garrulous old Italian campanologist who pulls the bells upon the floor of the top storey but one, by the united efforts of his arms and legs alike, I thought that in all my life, travelled man as I am, I had never seen more imposing or more beautiful architectural surroundings—the quaint, and, withal, noble eleventh century marble Cathedral at one's very feet; the octagonal Baptistery of the same material, and almost equal age, a little further west; and the Sampo Santo, away to the right, itself the most delightful and most romantic cemetery in all the world, formed a group I have never seen the like of before. The clear air brought out every line and detail sharp and distinct, and the almost oven-like heat caused a glow over everything—that I see plain enough, at the moment of writing, in my mind's eye, but which pen is altogether powerless to describe. At Pisa, on the very spot (and this information is confirmed, I see, by the current issue of "Bradshaw's Continental Guide") I was assured the tower was erected from the designs of Bonanno, of Pisa. It has an inclination of 13 feet, and is 180 feet high. This is against the Asinelle Tower at Bologna, which is 321 feet high, and is 7 feet out of upright; and the Garisenda Tower, in the same city, 161 feet high, and leaning 10 feet out of perpendicular.

If these notes of my own relative to Pisa be correct, where does Wilhelm step in?

It may be interesting to add: The whole, or nearly the whole, of the columns, and carved capitals upon the uppermost arcades are new—faithful copies of the originals. The capitals themselves are models of simplicity—some with and others without, astragals. Yet their effect from the ground is perfectly marvellous. Not a chisel stroke is thrown away—every line tells, and it would be quite impossible to imagine any series—for the design of every capital is different—more effective in regard to light, shade, and detail, when seen from the burnt-up grass sward, which, at the time of my recent visit, everywhere formed a brown covering over Mother Earth.—Yours obediently,

HARRY HEMS.

Fair Park, Exeter, August 30, 1901.

THE SITE FOR THE VICTORIA NATIONAL MEMORIAL.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—I have been urged, even at the eleventh hour, to bring under your notice an alternative site for the Victoria Memorial—on the elevated plateau in front of Kensington Palace—which about a month ago I ventured to suggest to an important member of the Memorial Committee. The accompanying plan*, reduced from the Ordnance Sheet, shows the site in question. With its converging avenues, fine sheet of water, open space, and endless ornamental possibility—without the sacrifice of a single tree, or altering in any way the present character of Kensington Gardens—this site is of unequalled importance and beauty. Further, its special fitness for the Memorial to the late Queen rests on her having been born at Kensington Palace—where her toys are still preserved—while it was there she was told of her succession to the Throne. No such associations gather round Buckingham Palace. I am, therefore, not without hope that you may be induced to give the subscribers and the general public, as is just and right, an opportunity of judging as to the relative fitness of suggested sites for the National Memorial to our great Queen.—I am, yours faithfully,

WEMYSS.

Gosford, Longniddry, August 22, 1901.

*The plan referred to by Lord Wemyss sets forth his lordship's ideas very clearly, but, unfortunately, limitations of space prevent us from reproducing it upon any adequate scale.—ED.]

ARCHITECTS' BOOK-KEEPING.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—Some architects are often puzzled as to the best method of keeping their books. As most of them have but a very slight acquaintance with commercial methods, the want of a little system in keeping accounts leads to utter disorder in many an architect's office, so much so that in many instances, save for the light thrown on the subject by the bank-book, architects often have not the slightest idea of how they stand financially. The mere thought of keeping a set of books seems to frighten many of them.

Perhaps if I were to mention the method which I myself have adopted for keeping accounts, it might prove of passing interest. My system would, I fear, hardly commend itself to the professional accountant, but the average architect—I mean the man who does most of his own work, and has, possibly, one assistant and a pupil—cannot waste much of his own time on book-keeping, and he usually has other work for his staff to do. My method is simply reducing to a minimum the number of books requisite for an architect's everyday practice. I have, first of all, a letter book specially devoted to accounts sent out, receipts being copied in the other end of the same book. No receipt or account should leave the office without being copied in this book. I have next an inspection book, in which every inspection and its date is entered. Then, of the more formal books I have only two—a cash book and a client's ledger. In the cash book I enter daily all receipts and payments (I can post the payments from the receipts' book). The ledger is of the simplest character. An account is opened for every new client in ordinary ledger form—payments on one side, work done debited on the other. I make no attempt to keep an elaborate set of books in double entry, because I consider it quite unnecessary, unless a man's practice is a very big one, or that he can keep a clerk or book-keeper, to indulge in this.

The cash book I balance quarterly—I find that often enough for my purposes; but you can balance it once a month, if you prefer.

In addition to these books there is, of course, a diary, but, although payments are sometimes entered in it, I regard it only as a record of office work, calls, letters, etc., for the day. An unindexed book is worthless for practical purposes, so I place no reliance on it for posting, if for no other reason than the abnormal time it takes to find an entry in such a book.

The arrangement I have outlined can, of course, be modified to suit individual requirements, but I am certain that I have described the minimum number of books which suffice to keep accounts with any sort of decency or order. I need scarcely add that every book should be numbered and indexed.—Yours faithfully,

ARCHITECT.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

W. C. ROBERTS wishes to know the name of any book treating of Builders' accounts and balance sheets.

W. C. ROBERTS (Dublin)—"A Perfected System of Builders' Book-keeping" (Simpkin and Co.) Price, 3s. 6d. This work is the only one we know of on the subject, and it contains examples of all the books of a builder's and contractor's business, and has run into two editions. You can order it from Messrs. E. and F. N. Spon, Limited, Scientific Booksellers, 125 Strand, London, W.C.

[Mr. W. K. Parry has written on "Office Management" for engineers and architects (published by E. and F. N. Spon, Ltd., Strand, London, W.C.) You might derive some hints from this. We are endeavouring further on this subject.]

A. F. (Dublin)—The French architectural papers are, *La Construction Moderne*, 13 Rue Bonaparte, Paris, and *L'Architecture*, 51 Rue des Ecoles, Paris.

J. MAX HILL—The Berehaven Scheme is being promoted by an American syndicate, but we feel certain it will never come to anything. Berehaven is one of the most inaccessible places in the Kingdom.

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TOPICAL TOUCHES.

The creditors of Mr. Alfred Gilbert, R.A., the eminent sculptor, held their first meeting at the London Bankruptcy Court.

Mr. Gilbert, who filed his own petition, estimated his debts at £7,000. He stated that he had been a sculptor for twenty-four years, and that from 1884 to 1894 his income averaged £2,000. On the death of Sir Edgar Boehm, in 1894, he was engaged to complete a quantity of his unfinished work, which did not remunerate him as his previous work had done.

In order to undertake large statuary, Mr. Gilbert built his present studio in Maida Vale, borrowing £7,500 for the purpose. In 1898 he was pressed for money, and borrowed a further £2,000, which was paid into a bank in the name of Mr. G. E. Lewis and another gentleman, and since that time these two had practically controlled his finances. Since 1898 he had earned £2,700. Mr. Gilbert attributed his failure to unremunerative commissions. The assets were largely dependent on the completion of commissions in hand.

It was decided to wind up the estate in bankruptcy, with Mr. Lawrence Hasluck as trustee.

The Portland cement output of the United States during 1900 reached 7,000,000 barrels, and it is anticipated that by the end of the present year it will have reached 10,000,000 barrels.

According to the San Francisco *Argonaut*, the Philadelphia City Hall was designed to cost £600,000, and was to be completed within ten years, an extraordinary allowance of time. It has cost £5,000,000, and, after thirty years, is yet incomplete.

A Russian post-office was opened last week at Jerusalem. Divine service was celebrated in the new building, a *Te Deum* being chanted by the Russian clergy. The Russian Consul-General and his staff were present, and there was a large attendance of Russian residents and pilgrims.

The new lifeboat house at Kingstown has a width of 19ft. and a length of 55ft. It is built of timber and filled in with concrete slabs, the roof being covered with tiles. The interior is fitted up in the most convenient manner for the reception of the lifeboat fittings and appliances. In the front of the building, overlooking the harbour, a room is built for use of the local committee, or the crew when on watch. The boathouse stands on a raised steel slipway, about 130ft. in length.

The Danish Arctic explorer, Captain Daniel Brun, who is now on his way back from Iceland, announces that he has come across the most ancient traces of the Irish colonisation of Iceland. It will be remembered that before the Scandinavian settled there Irish monks landed on the island, and established themselves chiefly on the south west of Iceland. Captain Brun has found traces of these settlements, going back to the farthest times. These consist chiefly of ruined cells, the measurements and designs of which he has noted. He has also found church bells and other relics.

The Sanitary Institute, which has been housed for the last quarter of a century at the Parkes Museum, Margaret-street, Oxford-street, W., has quite outgrown the accommodation provided for it at the museum, and it has been resolved to erect a home fitted for the carrying on of its important work. It has a membership now of 2,500.

Professor Lorrain Smith, of Queen's College, Belfast, has just completed his report to the Corporation of that city on a bacteriological investigation of the experiment of contact beds for sewage treatment. In it he gets results which promise, in some degree, to simplify the sewage question as it presents itself in Belfast, and which may be suggestive to other municipal authorities approaching a similar problem.

Mr. H. R. Lloyd, architect and surveyor, of Birmingham and Redditch, was accidentally poisoned at Redditch by taking carbolic acid instead of some medicine which he had for a cold. Death took place in twenty minutes, before the doctor, who was summoned, could arrive. Deceased, who was in his 48th year, was a lieutenant in the Redditch Battery of the Worcestershire Volunteer Artillery. He was a well-known man, and was highly respected. It is alleged that the bottle was handed to him in mistake by a second party.

The current monthly number of *Irish Masonry* is now ready, and contains several interesting features. The illustrations, as usual, are very good, and include capital likenesses of Viscount and Viscountess Powerscourt and of their son, the Hon. Mervyn Wingfield, whose coming of age was recently celebrated.

Italy exports 105,000 tons of marble a year, valued at £420,000.

The eleventh edition of Colonel Sir Howard Vincent's "Police Code," which has just been issued, contains an interesting preface by Sir Edward Bradford, and an address to police constables on their duties by Lord Brampton. Lord Brampton urges every member of the force to acquire some knowledge of the art of drawing, so as to be able to make rough plans, and to write down and draw on the spot a full-sized outline of footprints.

It has been reported recently that an old Bohemian clock-repairer in Chicago has just completed a wonderful clock, after 19 years of continuous work upon it. In size alone the clock is an extraordinary piece of work, measuring 15ft. square at the base, and over 18ft. in height. This clock is literally a world in itself. A miniature earth circles around the dial, and turns on its axis once in every 24 hours. The sun, the moon, Mars, Saturn, Venus, and a score of stars and planets revolve in their proper places. The moment the clock strikes the hour, a door beneath the dial opens and a procession of all the Presidents of the United States passes into view. Following these come a series of representative figures symbolizing the growth of the Republic. The inventor refuses to exhibit his clock or to sell it at any price. He says that it is his life work, and is not to be examined by others until his death.



Ballynaveigh (Belfast).—Important additions to the Convent here are in progress, from the designs of Mr. W. H. Byrne, of Dublin.

Castlebar (Co. Mayo).—The new large Church of Our Lady of the Rosary will be opened on 6th October. The ceremony promises to be a most imposing one, as many of the greatest dignitaries of the Catholic Church in Ireland have promised to attend. The architect is Mr. Walter G. Doolin, M.A., Dublin, and the contractor, Mr. John B. Healy, Tralee.

Clonmel.—THE NEW BUILDINGS.—Dr. Courtney, Inspector of Lunatics, has reported as follows on his inspection of the Clonmel Asylum on August 20th and 21st:—"Since the last report on this asylum was written, the committee have decided to provide the much-required additional accommodation, and, with this view, have directed plans to be prepared for housing 150 patients—100 men and 50 women—in three separate villas. Excellent sites, having southern aspect and affording extensive views of the surrounding country, have been selected for these buildings. The committee have further taken into consideration the requirements of the institution, and decided to carry out some necessary and important improvements, amongst others—(1) the provision of an observation dormitory in the female house for the use of patients requiring special supervision; (2) provision of a tea infuser for the kitchen; (3) erection of a mess-room and recreation-room for male attendants; (4) a mortuary; (5) the heating of the front corridors in the female house; (6) enlarging of the male dining-room, and (7) raising of the roof of the attic in the male hospital. Only the last of these improvements has been carried out as yet, viz., the raising of the roof of the male hospital, by which space for fourteen additional beds has been obtained. Some of the other works involve structural alterations, and must await the provision of the additional accommodation. Others, however, are small works which might be taken in hands at any time. It has further been decided to acquire additional land, and with this view steps are being taken to purchase 14 acres adjoining the asylum. This will certainly be a great addition to the resources of the institution; its great want has always been some means of affording occupation for male patients. It is to be hoped, however, that this new piece of ground will prove so profitable and so useful that the committee will be induced to make further additions to the farm, so as to render it in some degree commensurate with the size of the institution. Unfortunately, the new buildings will take up a large part of the land at present utilised for tillage. When the new buildings are completed the connection of the various blocks by telephone will be urgently required, as the distance will be so great that it will be impossible otherwise to supervise the whole establishment. There are now on the asylum books the names of 716 patients, of whom 346 are males, and 370 females.

ELECTION OF A SURVEYOR.—Mr. D. W. Morris, of Dublin, at the last meeting of the Joint Committee, was, on a division, elected Quantity Surveyor, the other candidates being Messrs. Beckett and Metcalfe and W. Sanfoll. Mr. J. F. Fuller, of Dublin, is the architect.

Carlow.—THE ROMAN CATHOLIC CHURCH.—The Most Rev. Dr. Foley said that with regard to the matter of the proposed enlargement of the Catholic Church, it was time to again bring the matter forward. There was a proposal from Mr. Quilton, the County Surveyor, some time ago, that the enlargement could be effected at a cost of about

£2,500, and the committee decided not to go on with that, but thought that it could be done for £800. Since then the committee came to the conclusion that it could extend the church to such an extent as to have all the patients there at the same time, and he (his Lordship) was directed to get a Dublin architect. His Lordship thought, at the time, that the work could be done for £1,500. Mr. McNamara had made an inspection, and all the changes would be embodied in the amount mentioned. The first thing the committee should do was, pass a resolution rescinding the motion to expend £800, and give notice that £1,500 be expended on the work. He thought that several applications had been made to Mr. Quilton to send in his account.—Dr. Fitzgerald: Only one. There was one made, and he stated he could not say how much was due until all the works would be completed.—The Most Rev. Dr. Foley said that application was made to Mr. Quilton for the purpose of ascertaining what was the amount. Previously he had sent in, in a general way, that the amount of his account would be about £900. Assuming that that would be the amount he (his Lordship) understood from Dr. Fitzgerald that they would still have such an amount of money as would allow their expending £1,500 on the church. Of course, the cost might go below that amount, and it might be £100 above it. It was far more likely that it would be the latter. He did not know what was to be done until they would get information from Mr. Quilton. The committee had asked for the information, but they did not receive it.—Dr. Fitzgerald, in reply to his Lordship, said Mr. Quilton had not acknowledged the receipt of their communication.—Most Rev. Dr. Foley: Assuming that his bill does come to that amount, we will still have money to do the work. We have already come to the conclusion that we will spend £800, and the first thing to do is to rescind that resolution, and pass one for the spending of £1,500.—The committee, after some further discussion, decided to have plans and specifications of the proposed work forwarded to the Inspectors of Lunatics, and a resolution, proposed by Mr. Engledow, and seconded by Mr. Bergin, requesting Mr. Quilton to send in his account, and the full details asked for some time since, was passed.

Dublin.—The Nurse's Home in connection with the Royal City of Dublin Hospital is now in course of erection. Messrs. H. and J. Martin, Ltd., are the contractors.

Messrs. J. and P. Good have secured the contract for the addition to the Adelaide Hospital. These additions will afford some very much-needed extra accommodation for the nurses.

The work at the Coombe Lying-in Hospital has not yet been begun. When finished, this re-modelling of the wards will do a lot towards bringing them up to modern notions of hospital planning. Mr. A. E. Murray, A.R.H.A., of 37 Dawson-street, is the architect for all these works.

Drogheda.—THE FEVER HOSPITAL IMPROVEMENTS.—The Secretary of the Board of Works wrote acknowledging the receipt of the board's letter pushing on the request for a loan to carry out the Improvement Scheme in the fever hospital, and stating it would now have the Board's attention.

DROGHEDA CORPORATION.—Some time since it was mentioned at one of the Corporation meetings that a vacant house in Fair street, belonging to the "City Fathers," would suit admirably for the opening of a school for technical instruction here. By the discussion which took place on the subject at the meeting on Wednesday last it would seem that that opinion has now been changed in favour of the Watchhouse in Peter-street. The latter, it appears, is not only more central, but its extensive rear affords greater opportunity for developing the school by erecting workshops for the students attending the various classes of instruction.

Enniscorthy.—Tenders were received on the 12th for internal wood-work to roof, etc., and other alterations to Catholic Church, Killealy, Enniscorthy, by the Rev. John F. Kennedy, C.C., Killealy, Enniscorthy. Information from J. Kelly Freeman, M.R.I.A.I., Archt., 67 Eccles-street, Dublin.

Enniskillen.—The County Infirmary is about being rebuilt from the designs of Mr. A. E. Murray, of Dublin.

Kilkenny.—The Kilkenny Corporation are again tackling the question of providing a pure water supply for the old City of the Federation. The County Surveyor of Kilkenny, and Mr. MacCasse have reported on a scheme from Douglas River, which, at a cost of about £20,000, would give a supply of over 200,000 gallons per day. The Clonmel waterworks, one of the greatest boons ever conferred on the town, cost only about £14,000, but, of course, the situation was more favourable there than in Kilkenny.

Kells.—A NEW DISPENSARY.—Dr. Gavin wrote bringing under the notice of the board the necessity there existed for providing a new dispensary for Moynalty. Mr. Carpenter gave notice that he would move on that day fortnight that the council take the necessary steps.

Kingstown.—Captain Cunniam's new premises at Upper George's-street are just complete, and it certainly will be one of the finest buildings in the town.

Lismore.—Mr. Arthur E. Murray, A.R.H.A., has prepared plans for re-building the Fever Hospital at Lismore, Co. Waterford.

Mr. A. E. Murray, of Dublin, has prepared plans for re-building the Lismore Fever Hospital.

Lurgan.—The district committee appointed to carry out the erection of a new Orange Hall in Lurgan have adopted a design by Mr. Henry Hobart, C.E. The cost of the undertaking is approximated at £2,000.

Letterkenny.—The usual monthly meeting of the Letterkenny Rural District Council was held in the board-room. Dr. Irwin reported the dwelling-house of Wm. Allen, Lisclamerty, as being in want of certain repairs. The Council instructed the Clerk to serve the necessary notice on the owner, Sarah Meehan, requiring the house to be repaired within one month. The several sanitary sub-officers of the district forwarded reports as to the sanitary condition of dwelling-houses in the district, and the usual notices were ordered to be served requiring sanitary defects be remedied. Mr. Michael O'Callaghan, C.E., attended before the Council with plans, specifications, maps, and estimates in connection with the scheme for the erection of fifty labourers' cottages in the rural district. Mr. Thomas Sweeney proposed that the plans, etc., be adopted, which was seconded by Mr. Henry Curran, and carried unanimously.

Loughlinstown.—Pemberton is making great progress with the building of the new chapel and nuns' residence at the Workhouse.

Maynooth.—THE TOWER AND SPIRE. — COMPLETION EXPECTED NEXT MONTH.—The Spire attached to the Church of Maynooth College has almost been completed. Each succeeding week adds perceptibly to the height at which it rises, and it is hoped that about the end of October the Cross, 14 feet in height, by which the spire is to be surmounted, will be placed in position. The scaffolding will then be removed, and the work of providing the interior fittings entered on. Six years ago, on the occasion of the Centenary celebration of Maynooth College, his Eminence Cardinal Logue, and the general body of the Hierarchy of Ireland, after mature deliberation, resolved on the task of completing the College Church by the erection of a tower, with clock and bells, and a spire. The Hierarchy appointed an Episcopal Committee to carry out the work, under the supervision of Mr. Hague, on the plans already prepared by the architect of the College Church, Mr. J. J. McCarthy, then deceased. On the death of Mr. Hague, the duty of supervising the carrying out of the plans of Mr. McCarthy and the specifications of Mr. Hague, fell to Mr. McNamara. The work was actually commenced on the 29th of March, 1890, and it has proceeded steadily since then. The tower, which rises to a height of 134 feet, has been altogether completed, and the spire, of which some fifty feet in height still remains to be finished, is to be 116 feet in height. The circumstances under which the work was undertaken are indicated by the following inscription on a tablet of polished Aberdeen marble, fixed over the door of the tower:—

D. O. M.
Quod intra Saeculum
An MDCCCXCV expletum
Prosperitati hujus Collegii
Mire Consuluerit Collegii
Curatores praevia Hierarchia
Universa Hanc Turrim
Ejus q. fastigium Templo
Perficiendo erectam ut
Saeculare tanti beneficii
Monumentum Censuerunt
Posteris exhibendum.

The contractors are Messrs. Wm. Connolly and Sons, Upper Dominick-street, Dublin.

Rockwell College.—RECENT IMPROVEMENTS. — This great College is growing with the times. It has a record of rapid progress of which it may well be proud. Fifteen years ago or more the handsome mansion sheltered within its hospitable walls only about fifty students; to-day there are 210 students, and the college stands in the first rank of our great Catholic educational establishments. Its success as an educational centre, so well demonstrated in the Intermediate and other public examinations, attracted pupils from all parts of Ireland, and from abroad, too, and this, of course, necessitated the extension of the buildings. The erection of the handsome little church at a cost of between £4,000 and £5,000 released the ground floor on the northern block, which is now used altogether as a dormitory. In addition, spacious, well-equipped class-rooms, as well as covered corridors, for the use of the students in wet weather have been erected, and to complete the quadrangle, a fine, roomy building is being put up between the church and the dormitories, which will enable the community to provide accommodation for about 80 more pupils, for they expect to have 300 on the rolls in a year or so. This new building is being erected by Mr. Holloway, Cahir. Mr. G. C. Ashlin and Mr. D. W. Morris, both of Dublin, were respectively the architect and surveyor.

Rathdown Union.—Tenders will be received by the Board of Guardians on 25th Sept., 1901, for slating the Workhouse Buildings for a period of three years. Tenders will be received by the Board of Guardians on 18th Sept., for alterations to two wards in the workhouse. Plans and specifications prepared by P. F. Comber, C.E. Mr. Patrick Cunniam is the Clerk of the Council.

Sligo.—THE ASYLUM AGAIN!—A letter was read from Mr. Clarence, the contractor, in reference to the demand of the Committee that he should level certain concrete flooring to put down wooden blocks thereon. He said he was prepared to do the basement, the infirmary, and dining hall, but he did not think he should be called on to mend the flooring in apartments of which the Committee had the use for three years, and where several workmen had a traffic over, leaving them more or less unfit to receive blocks. It was not, he said, his fault that the blocks were not laid down when they should have been. In justice they should pay him for doing this work.

CHAIRMAN—Are we entitled to pay him or not? What does Mr. Deane, our architect, say?

DR. PETIT—Mr. Deane says he should fix the flooring. Since the day he fixed the dining hall there has been no traffic over it.

The CHAIRMAN recollected going with Col. Cooper to see some flooring where block flooring was to be put down, and they found it in a disgraceful state.

DR. PETIT—What was concreted in '96, except where it is a little thick at the door, is the best done of any part, and there is traffic ever since. It is the unevenness, and not the want of smoothness, that is complained of.

CHAIRMAN—We will refer this matter to Mr. Deane.

DR. PETIT—A technical matter of this kind should be left to him. What do we know about it?

CLERK—You have also to settle about the sanitary annexes.

CHAIRMAN—Call a meeting of the Building Committee to consider all these matters when you hear from Mr. Deane.

There were a number of letters next read from Mr. Deane and other reference to certain works which are being carried

on by contracts throughout the buildings, all of which were referred to the Building Committee.

MR. DEANE wrote objecting to the Committee deducting £12 10s. from his account, which had reference to certain works which came under his supervision at the laundry, and £6 6s., fees in connection with the erection of the new Protestant chapel.

DR. PETIT said he and Mr. Kilgallen visited the steam laundry in the Ursuline Convent, and adopted plans for the Asylum therefrom. These had to be formally submitted to Mr. Deane, who now demanded £12 10s. for looking over them.

CHAIRMAN—He is claiming for work you did. Will I mark the letter "read" or "refused"? I would say that we should refuse it.

DR. PETIT—The £6 6s. is for the duplicate for the chapel.

CHAIRMAN—I would refer that to the Building Committee, but I would refuse the other.

CLERK—He gets half-fees—2 per cent. He wants 4 per cent.

The Chairman's suggestion was adopted.

Omagh.—THE NEW PROTESTANT CHURCH.—A communication was received from the Protestant chaplains to the Institution stating that they met Mr. Donnelly, the architect, and had given him their views as to the site for the new Protestant church, which should have accommodation for not less than 200. They would suggest as a site the ground to the right of the avenue above the gas holder. It was decided to inspect the site.

Tipperary.—A meeting of the Tipperary District Education Committee was held, which was largely attended. Correspondence was read from the Technical Education Department, stating that the committee's scheme had been approved, of, and that the income was estimated at £713 a year; the expenditure £630, exclusive of initial cost of £300. They also approved of the erection of an iron building for the manual school, and the detailed sub-committee named for managing local centres. The question of the erection of the iron school building was also referred to the same body, with full power to carry out details. It was stated that Mr. Townsend had given a site for the technical schools, near the police barracks, at a nominal rent, and it was arranged that plans be drawn up by Mr. Kirby, C.E.

Tipperary.—While the Tipperary Town Council are proposing to get electricity to light their streets instead of gas, the Nenagh city fathers are considering a proposal to light the town with acetylene gas. In this connection we are glad to see that in Clonmel the old-fashioned system of lighting street lamps by ladder and matches has for some time back been replaced by the more expeditious and up-to-date hand-pole torch.

The Department of Agriculture and Technical Instruction have issued a circular in reference to the administration of the grants for science and art instruction in Ireland. It is not proposed to make any material changes for the present year in the rules governing the payment of these grants to evening science and art schools and classes, schools of art and training colleges. They do, however, intend to take an early opportunity of revising the system of grants in such schools and classes. Some modifications in rules have been determined on, and are fully set forth in the circular, which can be had from the secretary of the Department, Upper Merion-street.

Venice and Waterways are invariably and closely associated, but, unfortunately, there seems to have arisen no little danger of the Adriatic exceeding its usually prescribed limits. It is not a long time since a great staircase leading from the Ducal Palace to the Grand Canal was overwhelmed by the sea, which has now penetrated the crypts of several churches, the foundations and general fabrics of which are seriously menaced. Local measures are under consideration to avert the peril, which is said to threaten the existence of the beautiful city itself, and it has been felt necessary to take immediate steps to protect the Church and Palace of St. Mark from any possible contingencies.



Bray.—The new plant for the Electric Light Works is on its way, and is wanted very badly.

Blackrock and Kingstown.—THE DRAINAGE BOARD.—Mr. Wickham inquired who was to connect Mr. Behan's sewer. Was it the Main Drainage Board or the Urban District Council?—Mr. Donnelly said in Kingstown the owner did it, and was compelled to do so.—Mr. Field said that Mr. Behan had got enough out of them. It cost him (Mr. Field) £16 to connect his two new houses. There was only a shore at Mr. Behan's. It was ordered that Mr. Behan connect at his own expense, with Friar's sewer.—The following letter was received from Messrs. Kaye Parry and Ross:—"Dear Sir,—We have duly received Mr. Berry's report, but we have not received any report from Mr. Byrne. When the sewage tank was cleaned out, Mr. Ross attended it and examined it in company with Mr. Berry; he is at present in London, but he informed Mr. Kaye Parry that he had observed indications of a settlement along the East Face (see Mr. Berry's report). At present the crack is so small that unless it were cut out it could not be stopped, and we think that the matter might stand over until the next time the tank is cleaned out, subject to Mr. Berry's approval. Mr. Kaye Parry visited the pumping station yesterday. We are glad to find that the structural works are approaching completion, and we hope that Mr. McGarvey will be able to put in the new screen very soon. We note that Mr. Berry is taking steps to exclude the surface water from the pump-house, and we approve of his proposals.—Yours faithfully, Kaye Parry and Ross."

Borrisoleigh.—Mr. Williams, C.E., sent in a specification for remedying the Borrisoleigh sewage system. A letter was read from Mr. Gleeson, D.C. asking to have the consideration of the matter adjourned till he would be present. Its consideration was accordingly adjourned. The council adjourned.

Cashel.—Now that the Great Southern and Western Company's Bill authorising this line has passed into law, many people have been asking when the work of building the road that is to bring the old City of the Kings into closer touch with the outer world will begin. Dean Kinane, P.P., Cashel, who so successfully piloted the railway project for the citizens, recently wrote to the G.S. and W. Company on the matter, and received a reply stating that the plans for the line will be prepared, and the work commenced as soon as possible, but that at present they were unable to mention a specific date. There has been a continuous stream of visitors to Cashel during the summer, the grand old pile on the Rock being an ideal venue for holiday-makers.

Callan.—The Clerk of the Callan Town Council wrote stating that they would consent to a trial hole being sunk on the Fair Green for the purpose of the proposed sewer from the workhouse, provided the guardians would accept full liability for all compensation for damage done. This was agreed to.

Callan. Workhouse Drainage.—The following was read at the meeting of the Board of Guardians from Mr. A. M. Burdon, County Surveyor, Kilkenny:—"With reference to above, I find it will be necessary, before completing my specification, etc., to know whether it is likely that rock will be found at any part of the excavations. It would also be very desirable that intending contractor should have this information, so as to avoid putting in speculative prices. What I would advise the guardians to do is to have a trial hole sunk about 18 feet deep in the Fair Green, about 20 yards from the east corner of the school enclosure. I dare

say the Clerk of Works could have this done and report what the nature of the ground is. If the Guardians decide to have the work done, it would be desirable to do it without delay." It was decided to act on the suggestion.

Enniscorthy.—THE LIGHTING OF THE ASYLUM.—The sub-committee submitted a report recommending that the institution be lighted with oil gas. In connection with the lighting question a circular was addressed to the governors by the local Gas Company.

Fethard.—Mr. F. R. Webb, Randalstown, Co. Antrim, is fitting up the old mill at Maryville on the Rocklow road, to be worked as a motive power to supply the town with electric light. It is proposed to use water power while the supply is sufficient in the river, and when that fails the works will be driven by an engine. The introduction of the new light will be a great improvement to the town, and some maintain it will be a considerable saving. The Urban Council are also considering the advisability of using it for the public lighting of the town. If the movement is successful, it will be an improvement all round. The light is splendidly bright and perfectly clear.

Louth.—The County Council will consider tenders for the repairing of the Drogheda Courthouse, on the 20th inst. **Townley F.** Filgate is the secretary to the Council.

Monaghan.—The Urban District Council of Monaghan are prepared to receive tenders from competent parties for works which include the construction of a storage reservoir at Togan, including all excavations, embankments, weirs, intake chamber, valve pit, fencing, and contingent works; the construction of an aqueduct of about four miles six furlongs in length, consisting of six-inch and eight-inch cast-iron pipes, with all sluices and air valves, hatch boxes, and other appliances; the distribution system through the town and district of Monaghan, with all valves, hydrants, street fountains, etc.; the construction of filter beds, clear water basin, gauge trough, valve pits, pipe-laying connected therewith, fencing and contingent works. Plans and specifications may be seen, and forms of tender obtained, on application, and the payment of three guineas, to J. L. Devenish Meares, C.E., Town Hall, Newry, or J. H. M. Wilson, C.E. Monaghan. Tenders may be sent in before 10 a.m., on the 5th of October, 1901, addressed to "The Chairman, Urban District Council, Monaghan." Preference will be given to the contractor who will undertake to use Irish materials (when suitable Irish materials can be had) in the construction of the proposed works. Mr. Joseph F. Smollen is the Clerk to the Urban District Council.

Meath.—Above Council will, at their meeting, to be held on Monday, the 16th inst., proceed to elect an assistant surveyor for No. 2 District of the County Meath, at a salary of £100 per annum, subject to the approval of the Local Government Board, and on the terms of Report No. 23 of the Finance Committee, as amended and adopted by the said Council on the 6th of August, 1901. The person so elected must be prepared to satisfy the Local Government Board that he is qualified for the office. Applications must be lodged not later than 2.30 o'clock, p.m., on the 16th inst. No. 2 District of the County Meath comprises the Rural District of Dunshaughlin; mileage, about 284 miles. The secretary is Mr. Hugh J. Cullen.

Nenagh.—In Nenagh the people pay 6s. per 1,000 feet for gas, and the lamps are only seventeen-candle power. The Irish Acetylene Gas Company proposed to the Town Council to furnish a plant for lighting the whole town at £2,400, or the streets at £1,385, which would work out at about 3s. 5d. per 1,000 feet, and give fifty-candle power lamps. They also offered to light the two principal streets as an experiment for £391. The Town Council, however, after discussion, agreed to accept the Gas Company's tender again, and deferred the question of adopting acetylene gas till next summer.

Newtownstewart.—At a recent local meeting Messrs. Steen and Smyth were requested to canvass the town to see how many would use the new gas. All present agreed to use the gas in their own houses. The next meeting was held on Monday evening at 8 o'clock p.m. At this meeting there were not so many present—characteristic of Newtownstewart. However,

tho few enterprising gentlemen present decided to push on the project by forming a company. However, one difficulty cropped up, that of having no authority to collect the rates for the street lighting. It was decided to ask the District Council to assist them. So there the matter rests for the present.

Navan.—THE WATER SUPPLY.—The Town Clerk, Navan, wrote:—"With reference to water supply to Navan Workhouse, I find that it is the intention of the Guardians to put in service pipes of three-quarter inches internal diameter, and I beg to point out that it is illegal to put in larger than half-inch, except without the consent of the Council. Apart from the illegality of the question, I would suggest that if your engineer considers half-inch pipes sufficient that it be used instead of three-quarter inch pipes, as the suggestion, if adopted, may save trouble later on." The matter was referred to the architect.

Tipperary.—While the Tipperary Town Council are proposing to get electricity to light their streets instead of gas, the Nenagh city fathers are considering a proposal to light the town with acetylene gas. In Clonmel the old-fashioned system of lighting the street lamps by ladder and matches has for some time back been replaced by the more expeditious and up-to-date hand-pole torch.

Wexford.—BETTER LIGHT ASKED FOR.—At the meeting of the Wexford Corporation, Mr. Rowe asked was there any possibility of having the town better lighted. He was glad to see in a report in the papers of the large profits the Wexford Gas Company were making and the prosperous condition in which it was. He saw that last year when coal was so dear they made a profit of £1,836, and they could only surmise that the profit was as much in previous years. According to the articles of association the shareholders could only get ten per cent. per annum out of the profits, and it was his (Mr. Rowe's) opinion that any profits that might be over and above the ten per cent. should go to the benefit of the council and the benefit of the town.

The following resolution was received for adoption from the Youghal Urban Council:—"That in view of the present agitation to open up by railway communication the isolated agricultural districts in Ireland, thereby putting them in direct communication with the large commercial centres in the United Kingdom, we, the Youghal Urban Council, hereby express our opinion that a line of railway between Dungarvan and Youghal, as shown on the accompanying map, would be a useful and beneficial line for developing the trade of the South of Ireland, and the inland and sea fisheries and tourist traffic, and would possess the following advantages:—1. It would be the shortest and most direct route between London and Cork and Queens-town. 2. It would form the quickest and most direct means of communication between Cork and Waterford and Rosslare. 3. It would open up large districts in the South and South-west of Ireland, putting important portions of the country in direct communication with the East of Ireland and England. 4. A survey of this proposed line was made and recommended in 1864 by Mr. Brunel, the greatest engineer of his time."

Waterford.—DUNMORE SEWERAGE SCHEME.—Writing in relation to the loan of £450 to the Council for the purpose of carrying out sewerage works at Dunmore East, the Local Government Board requested that certified copies of the plans, etc., of the works proposed to be carried out be furnished for deposit in their office. An order was made directing Mr. Jephson, assisting County Surveyor, to supply copies.—Mr. Maddock: Has Mr. Jephson been appointed by this Council?—Clerk: No, but he is the only person we can get to do the work.—Capt. Carew: What about Mr. Scully or Mr. Friel?—Clerk: Mr. Jephson is Mr. Duffin's, the County Surveyor's, assistant, and he is accustomed to this class of work.—Mr. Maddock: If we invited tenders for doing the work we might get some one, not that I have any objection to Mr. Jephson.—Clerk: This is special work.—Mr. Galloway: Mr. Jephson is the best man for us, as he is in touch with Mr. Duffin.—The Local Government Board wrote to say that they had recommended to the Commissioners of Public Works the loan of £450, sanctioned for the purpose of carrying out sewerage works at Dunmore East, and requested that the necessary particulars might be forwarded. Ordered to be furnished.

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No. 1002

The Mullingar Asylum.

WE are glad to note that at the last meeting of the Joint Committee of Management, Mr. Joyce, the County Surveyor, who has for some time past been acting in the capacity of architect, unreservedly withdrew a charge which he some time since made against Mr. Anthony Scott, M.S.A., architect, who had been called in to report on certain works at the Asylum, and on the publication of whose recommendations Mr. Joyce alleged that Mr. Scott had copied his specifications. In his withdrawal, Mr. Joyce was hardly so frank as the circumstances of the case appeared to demand, and it was only after pressure that he acted as we have recorded. Perhaps it will occur to most people that when there is now admittedly no foundation for the reflection in question, it would have been more gracious on Mr. Joyce's part to have promptly done what he eventually did do, not to say that it would have been still more gracious never to have used expressions which seemingly conveyed a false impression.

Mr. Robt. P. Porter, an American authority on the subject has been making a study of what he calls "municipal trading" in England. In calling attention thereto, our contemporary, *The American Architect and Building News*, has some interesting observations to offer. As everyone knows, England has for some years been experimenting with socialist theories, but it is only recently that the world has begun to comprehend the disastrous effect of the experiments. The appearance of German, American, and Belgian goods, not only in the markets which England once controlled, but in England itself, has served as a demonstration of the effect on British industry of supporting trades-union tyranny by the public force; but the matters in which the operation of socialistic schemes affected only the English themselves have not hitherto attracted much outside attention. Now, however, a curious light is thrown on the subject by a brief summary of a report of the Royal Statistical Society, which shows that municipalities in England have, within a few years, spent four hundred and fifty million dollars in establishing gas and electric-lighting plants, street railways, and similar "public utilities," to use the socialist phrase, and that the return on the investment, even now, when most of the

machinery is new, is less than one-half of one per cent. a year. It is notorious, as has been shown recently in America in the case of the Taunton electric light plant, that municipalities, in their desire to show an income earned on their investment, spend as little as possible on repairs and renewals, thus virtually throwing away the principal for the sake of making their books show a net income for a few years; and it will not be long, probably, before the British tax-payers, who are paying interest on this four hundred and fifty million dollars, and must, sooner or later, pay the principal to those from whom they borrowed it, will find that they have nothing to show for the money. Obviously, unless the gas and electric-lighting service, or the operation of the street car lines, is discontinued, the British tax-payers will then have to put their hands in their pockets for four hundred and fifty millions more, to be sunk in the same manner. Not only has municipal control of "public utilities" apparently started many flourishing communities in England on the road to bankruptcy, but it is a common complaint that the utilities themselves are far less satisfactorily managed by municipalities than by private parties. Where private lighting or street-railway companies, anxious to keep their customers and get new ones, compete in cheap and efficient service, and adopt at once any improvements in processes or machinery which will contribute to that end, the officers of a municipal corporation, having once incurred a large debt for the purchase and equipment of a plant, are usually unwilling, not to say unable, to raise an additional sum for improved outfit, and must get along with the old one as best they can, avoiding any expense for repairs, which might diminish the apparent return on the investment, and threaten their own popularity with the voters. Moreover, in England, under the socialistic Acts of Parliament, any municipality is empowered to seize the plant of a private company furnishing lighting or transportation service within its territory, paying for it only at a certain valuation fixed by law, so that such a company, if it should, after years of trouble and expense, succeed in establishing a remunerative business, is in danger of seeing its property practically confiscated at any moment. It is hardly necessary to say that private capitalists do not care to risk money under such conditions, and the consequence is that England, which is carefully avoided by the promoters of lighting and transportation companies, is far behind the Continent in electric-light and street-car service. Our contemporary sums up the matter by saying:—"The appetite of small municipal politicians for speculating with public money under the protection of Acts of Parliament does not, however, appear to be diminished by the discouraging results of their efforts; and, instead of confining themselves to the comparatively safe field of lighting and transportation, they show a disposition to enter on more hazardous operations." We wonder what our own Dublin Corporation think of these experiences. The Dublin rate-payers have ever shown an apathy that is truly remarkable.

The question of purification of city sewage is one of perennial interest. On the whole, Berlin seems to be the place where irrigation is practised with the greatest success. With characteristic German thoroughness, assisted by German simplicity and directness of means for utilizing private property for the public good, the engineers of the Berlin irrigation system took possession, at the outset, of about twenty-eight thousand acres of land, suitably situated for their purpose, and laid out their filter-beds on a scale sufficient for a city of three times the population that they had to provide for. In this way, they have been able to extend their pipes, as required, without radical changes in the system, such as are unavoidable where land is purchased only as wanted, as has been the case with Paris. At present, about fifteen thousand acres are in use for irrigation, receiving sewage from a population of nearly two millions; so that the fields owned by the city will be sufficient for another century, at least. The system of irrigation is simple, but carefully executed. The sewage is distributed over the surface by small channels, while subsoil drains carry off the water, filtered by its passage through the ground, into the river. The whole territory is carefully farmed, nearly half of it



THE NEW YORK YACHT CLUB.
DETAIL VIEW OF PART OF THE PRINCIPAL FAÇADE.

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being used for growing grain, while most of the rest is kept in grass. From the latter portion, seven crops, on an average, are taken every year. The grains and small fruits also give an excellent yield, both quality and quantity being highly satisfactory. There is no typhoid fever in the villages on the estate, nor any special prevalence of other diseases; on the contrary, the conditions have been found so particularly salubrious that one, at least, of the more important health-establishments of the city has been moved out to the irrigation fields. Meanwhile, the bacterial-filtration system, which was adopted for treating a portion of the London sewage, in order to save the expense of land for broad irrigation, has not given the results expected from it.

Dublin Tenement Houses.

The "House Owners' Protection Association," of which Mr. R. G. Pilkington is President, has addressed a communication to the Dublin Corporation, complaining of the action of the Municipality in ceasing to clean the yards of the city tenement houses, and calling on the Corporation to resume this function. This work has for years been carried on at a cost to the general body of the ratepayers of £5,000 a year.

It would seem to us that a more proper course, and a less costly one would be for the Corporation to insist upon the individual owners of tenement houses performing their duties. The cleaning of the yards is a work which should fall upon those who make handsome profits out of our wretched Dublin tenement system and the unfortunate "room-keeper" class, rather than be a burden upon the already overloaded ratepayers of the city.

SPECIFICATION FOR SOLID WOOD FLOOR.

The floor to be of yellow deal, $1\frac{1}{4}$ in. thick, in $4\frac{1}{2}$ in. batten widths, wrought, rebated, and filleted. The fillets to be 1 in. by $\frac{1}{4}$ in., and the fillets and edges of boards to be coated with white lead, and each board to be cramped up singly till the white lead squeezes out at top. The flooring to be laid with straight joints and splayed beading joints, and each board secured by two 3 in. cut flooring brads to each joist. All nails to be punched down. The flooring to be bedded upon a layer of bituminous composition of pitch and tar $\frac{3}{8}$ in. thick, in the proportion of 1 cwt. of pitch to $7\frac{1}{2}$ gals. of coal tar, boiled together for one hour or longer, so that when cold it may be elastic and tough. The mixture to be spread evenly over the surface of the concrete, and levelled to receive the floor boards. The boards should not be laid till the composition becomes quite cold, which means at least five hours.

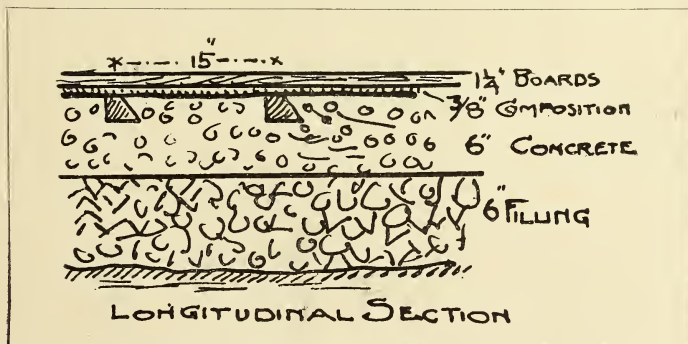
The sleeper joists to be of fir, 3 in. by $2\frac{1}{2}$ in., splayed on one side and creosoted 8 lbs. per foot cube, and bedded into the concrete 18 in. apart, centre to centre.

The concrete to be 6 in. thick, composed of one part Portland cement, 1 part fine stuff, and 5 parts of broken materials, such as stone, iron slag, or hard burnt bricks, to pass $\frac{3}{4}$ in. mesh. Gravel may be substituted.

The dry broken brick filling underneath to be 6 in. thick, well rammed, and brought to a level surface to receive the concrete.

J. T. REA.

NOTE.—It is important that kiln dried timber should not be used in these floors, and is essential that the sleeper joists be creosoted. It is preferable to use breeze concrete rather than gravel.—ED.



THE CORK EXHIBITION.

MEETING OF THE EXECUTIVE.

At a meeting of the Executive of the Cork International Exhibition, the Lord Mayor presided. Building and Arrangements Committee's recommendation accepting lowest tender, viz., that of Bible Bros., for the painting contract for two of the halls at £2,100 was adopted. A recommendation of the Finance Committee that a grant be made to the city bands to ensure their being properly trained for the Exhibition was approved of. A deputation consisting of the Lord Mayor, Alderman Phair, Alderman Hemsworth, Messrs. P. H. Meade, Farrington, and Shanahan, was appointed to visit Limerick on Monday next for the purpose of collecting funds in aid of the Exhibition, and in connection therewith letters were read from Alderman Joyce, M.P., Sir Thomas Cleeve, and the High Sheriff, Mr. James F. Barry, promising the deputation a hearty reception, and a letter was read from the Mayor of Chicago stating that it would give him great pleasure to use his influence in furthering the success of the Exhibition. Sir Alfred Rollit, M.P., also wrote approving of the exhibition, and dwelling on the great fillip it would be towards developing the industrial resources of the country, and placing her on an equal footing with Denmark and other countries.

OUR ILLUSTRATIONS.

DETAIL VIEW OF BAY WINDOW—THE NEW YORK YACHT CLUB.

Following on our illustration of the principal facade of the New York Yacht Club, which appeared in our last issue, we now present our readers with a detail view of one of the bay windows of the smoke-room. Our readers will notice the quaint resemblance to the stern of an old frigate, or East India man.

Melancholy interest attaches to this view, for the club, whose headquarters the building in question is, has had to postpone the international race, which gave us an excuse for publishing this rather interesting view, owing to the death of a respected and beloved President at the hands of a miscreant, the consequence of whose misdeed has called for the sympathy of the entire civilized world. Our illustration is from the *American Architect and Building News*.

Mr. Daniel Hayes, of Fermoy, the well-known contractor, has quite a large number of big contracts for the War Office on hands at present. Barrack reconstruction schemes for Ballincollig, Cahir, Clonmel, and elsewhere are all very big jobs, and run into a lot of money.

OUR INTERVIEWS.

NO. 4.

MR. ALBERT E. MURRAY, A.R.H.A., F.R.I.B.A., &c., Archt.

The subject of our interview comes of an architectural stock. For three generations, the Murrays—father, son, and grandson—have been well-known Irish architects. The Murrays are a County Armagh family of Scottish origin, settlers of the Uister Plantation. The original colonists were descended from a Colonel Murray, of Philipshaugh, on the Scottish border, of the Clan Athol, the head of which is the Duke of Athol. During the revolution of 1688, a Colonel Murray figured prominently in the siege of Derry, fighting on the side of the defenders. He became possessed of a sword, which is described as "the Derry Sword," and this sword was in the possession of Mrs. Francis Johnson, widow of the architect, at the time of her death.

William Murray, grandfather of Mr. Albert Murray, was the first architect of the family, and a first cousin of Francis Johnson, a famous architect of the last century, founder and first President of the Royal Hibernian Academy. Johnson was a native of the City of Armagh, and a *protégé* of the Primate of the day, who, struck with his talent, took him up at an early age, and sent him to Dublin in 1778, when he became a pupil of Cooley, his Grace's architect, renowned as the designer of the Royal Exchange, now the City Hall. He employed Johnson to superintend the Linen Hall, then in course of erection. Subsequently, Johnson went to one Samuel Sproule, architect to the Wide Streets Commissioners, who seems to have succeeded Cooley as architect to the Primate. Sproule died in 1784, and on his demise the Primate appointed Johnson his successor. The Archbishop appears to have been a staunch patron, for one of the earliest commissions Johnson received was to prepare designs for raising the tower and adding a spire to Armagh Cathedral. Owing to the foundations proving defective, the project was, in part, abandoned, and was limited to adding a stage to the existing tower.

Amongst the earlier works of Johnson was the Mansion House of Bakeby, near Marlay, in the County of Louth. Later on he designed and superintended the Roman Catholic Cathedral at Drogheda, the tower and spire of St. Peter's Church, and other works in the same town. St. Peter's tower is a very good work of the period, and the church boasts a wonderfully fine set of old church plate. In 1790 Johnson married a Miss Barnes, of Armagh. Townley Hall, near Mellifont Abbey, the fine seat of the Balfour family, followed in 1793. In the same year we find him employed at Slane Castle, the seat of the Marquis of Conyngham; at Kileen Castle, for the Earl of Fingal; Dangan Castle, for Colonel Barnes, and Fort Weston House, the seat of Dean Dawson; Ballingall, the seat of the Gibbons family; Charleville Castle, for the Earl of Charleville; while in Dublin he carried out additions to the Foundling Hospital (now the South Dublin Workhouse), and alterations to the Royal Hospital, Kilmmainham. In 1800, the year of the Union, he designed his best and most famous work—St. George's Church, a building somewhat in the manner of Wren's city churches, but showing the impress of the Greek revival, which, before the completion and opening of St.

George's, in 1814, had begun to exercise a marked influence on the work of the day. It is one of the most graceful of Irish churches, the steeple being of singularly elegant proportions, and is said to have cost £90,000. In 1807 Francis Johnson had been appointed architect to the Board of Works, and in 1814—the year of the opening of St. George's—he was architect of the Chapel Royal, in the lower Castle Yard, a church of the perpendicular period; of excellent proportions, and when one remembers the date of its erection, the character of the detail must be pronounced wonderfully good. Johnson also designed St. Andrew's Church (the old "Round Church," which was burnt down some thirty-five years ago, and replaced by the present beautiful Gothic church, designed by Mr. W. H. Lynn, R.H.A., Belfast). In 1818, the General Post Office, in Sackville-street, a large and imposing classical structure, designed by Johnson, was opened, and amongst other of his official works may be noted the Gate at Watling-street, the Richmond Bridewell, at Harold's Cross (now Wellington Barracks), the Richmond Lunatic Asylum, and several provincial asylums. Johnson died on 14th March, 1829. He founded and endowed the Royal Hibernian Academy, designed and erected the Academy House, which he presented as a gift, free of rent for ever, the whole cost being about £11,000. He was elected first President of the Academy. His widow

subsequently, at her own cost, added a Statue Gallery to the Academy House. Although so able an exponent of the renaissance art of his day, Johnson, strange to say, never visited the Continent, though he was often in England. He was buried in old St. George's churchyard, where a memorial to his memory is still in existence.

William Murray, the elder, was associated with his distinguished cousin, Johnson, becoming his partner in 1819, and, on his death, succeeding him as architect to the Irish Board of Works. He completed nine lunatic asylums from Johnson's designs. He did some work at the Bank of Ireland, probably operations in connection with its change from Houses of Parliament to a banking office; and he was also connected with Christ's Hospital (Bluecoat School), Dublin. He designed Ball's Bank, in Henry-street, Dublin; Castle Dillon; alterations to Carton for the Duke of Leinster; work for Lord



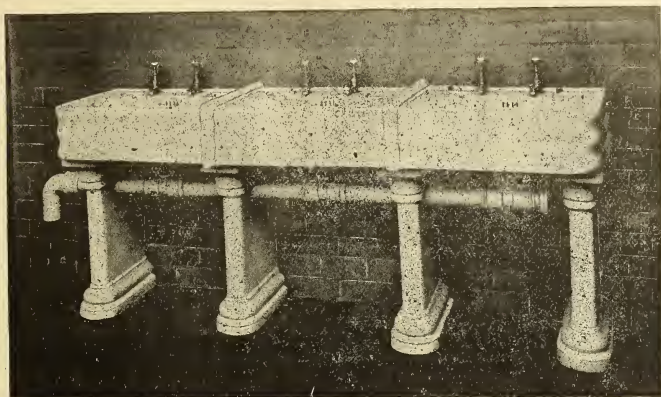
MR. ALBERT E. MURRAY, A.R., H.A.

Castlemaine, the Earl of Charlemont, etc. He carried out alterations to old St. Catherine's Church, Dublin; designed old Connought House for the first Lord Plunkett, the great orator and vigorous opponent of the Union, who, nevertheless, afterwards took office as Lord Chief Justice of Ireland; work at Malahide Castle, for the Lord Talbot de Malahide; work for Lord Meath; alterations to Sir Patrick Dun's Hospital, the Royal Exchange, the Marshalsea, and the King's Inns. He was architect to the Great Southern and Western, and the old Dublin and Drogheda Railways in their early days, and designed most of the early railway stations. He designed Gresham Terrace, Kingstown; while amongst the asylums built from his designs may be mentioned Armagh and Dublin, and the "Houses of Industry," Dublin. He is supposed to have designed the fine Courthouse and the County Gaol at Tullamore.

The work which, however, will probably best cause him to be remembered is the College of Surgeons, in Stephen's Green, Dublin, a fine, dignified work, which has lately been illustrated in the Irish section of that splendid publication, "Georgian Architecture," recently issued in eight volumes

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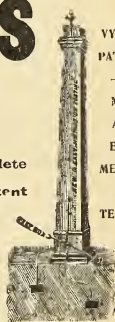
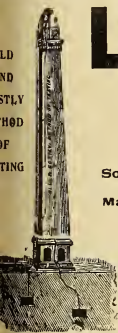
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by *The American Architect*, lately reviewed and illustrated in our columns. He died in 1849.

His son, William George Murray, R.H.A., succeeded to his father's connection, and, like him, enjoyed an extensive practice. He was architect to the Union Bank, the Ulster Bank, and the Provincial Bank; for the latter he built about twenty branch offices. He was responsible for the Gate Lodges in the Phoenix Park; he likewise designed Breslin's Royal Marine Hotel, at Bray; Messrs. Gilbey's head offices, in Sackville-street; the Standard Assurance offices, in the same street; the Scottish Equitable; the Old Men's Asylum, at Leeson Park; Waterford Railway Station; and, like his father, he was architect to the Great Southern and Western, and the Great Northern Railway Companies, etc.; designed the Royal College of Physicians in Kildare-street, the foundation stone of which was laid in 1862 by His Excellency Lord Carlisle, etc. William George Murray died in 1871.

Mr. Albert Edward Murray was apprenticed to his father in 1866, and succeeded to his practice. He spent some time in the office of the late W. McCurdy, President of the Institute of Architects in Ireland. He was also a pupil of the Dublin School of Art, where he succeeded in winning several bronze and silver medals. Later, he was in partnership with the late George Henderson for five years. Amongst the works carried out from his designs are:—The new wing to the Rotunda Hospital (the oldest, and still the largest and most famous maternity hospital in Europe, built out of his private purse by the famous philanthropist, Dr. Moss, in the eighteenth century); the new Royal City of Dublin Hospital; rebuilt the old Leper Hospital at Waterford; built a house for T. A. Anderson, Esq., at Waterford; Alms House, at Thurles ("Dame Stannix' Charity"); Garden Farm, Drumcondra, for Robert Paul, Esq.; Castle on the Island at Waterford; is architect by appointment to the Royal City of Dublin Hospital, and to the Royal College of Physicians, Ireland; designed the Theatre of the Incorporated Law Society at the Four Courts, Dublin (competition); several extensive "Maltings"; additions to the Adelaide Hospital, Dublin. Amongst the works which he has at present in hand are a large warehouse in Dawson-street, for Messrs. David Drummond and Sons; Nurses' Home and new Theatre for the Adelaide Hospital; Nurses' Home, Royal City of Dublin Hospital, and extensive alterations and additions to the Coombe Hospital; the Lismore Fever Hospital; Enniskillen Infirmary, and the Boys' Home, Lord Edward-street, Dublin. On the occasion of the visit to Dublin of Her late Majesty Queen Victoria, Mr. Murray was responsible for the laying out of the exceedingly effective decorations of Sackville-street, and also of Clyde-road, of which he is a resident; for many years Examiner in State Medicine in the Royal College of Physicians, Ireland. A large practice in domestic work.

Mr. Murray joined the Institute of Architects of Ireland in 1867, of which body he is now a Fellow, and was, for 17½ years, hon. sec., and, for 13 years, hon. treas. When Mr. Murray became secretary, the fortunes of the Institute were at a low ebb, and the greatest difficulty was experienced in inducing architects to join—funds were practically non-existent—and although he was instrumental in reducing the subscription during his tenure of office, he succeeded in placing to the credit of the Institute, accumulated funds to the extent of nearly £500. Now there is a general desire to join, and whereas the membership was formerly only 20 or 25, the Institute now boasts nearly 100 members, and has affiliated to it a healthy young society in Belfast. While secretary, Mr. Murray was always zealous in furthering the material interests of the Society, and preventing, as far as possible, the recognition of unqualified persons. For a period of 15 years the Institute had its head quarters in his offices, he also providing all clerical help gratis. As might be expected, Mr. Murray also paid attention to the social aspect of the Institute's functions, and inaugurated the very pleasant and sociable annual dinners, which have done so much to bring Irish architects in touch with one another. The dinners were at first limited to members of council, but were afterwards open to the members, of whom about 20 were present at the first dinner, while on the last occasion 80 sat down to dinner. Mr. Murray is a Fellow of the Royal

Institute of British Architects, an Associate of the Royal Hibernian Academy, and a Member of the London Architectural Association. He is one of the oldest and most regular supporters of those pleasant annual excursions organised by that body. He is also a Member of the Irish Architectural Association, and occupied the chair at the meeting which inaugurated the very successful revival of that Society, in 1896. Socially, he is well known and popular in Dublin, and is an enthusiastic golfer.

SPECIFICATION FOR PILED FOUNDATIONS.

(COMMUNICATED).

The following is a specification by a well-known Irish architect for piled foundations:

Digging.—Dig out the trenches for foundations of walls, column blocks, and drains, to the depths shown, and of the several widths required, and fill in again about same when the concrete is put in and the drain pipes laid, ramming well down in layers.

Piling.—The piles to be of larch or other approved home-grown timber, 20ft. long, 10in. diameter at the top, and 7in. at the bottom or point, clear of bark, and fix on lower end an iron shoe, weighing 10lbs., secured with strong spikes. On head place a wrought iron ring, weighing 12lbs., to prevent the pile splitting.

The ram to weigh 25cwt., and each pile to be well driven home by short falls.

The heads of piles, when driven, to be sawn off at an exact level, and the two tops opposite each other to be connected by a head piece of memel or pitch pine, 9in. by 6in., and well spiked. Across these, longitudinal pieces, 12in. by 6in., are to be placed in long lengths, the scarfs being 15in. long. Where the longitudinal pieces intersect each other they are to be half sunk and spiked together. The head-pieces are to be secured to the piles with 15in. by ¾in. spikes, and the other timbers to be fastened together by 12in. by ¾in. spikes.

Concrete.—After the foregoing piles and timbers are properly connected to each other, the whole space within and along the piles is to be levelled down to 6in. below the tops of same, and filled up with concrete composed of the following materials:—Broken whinstone, 2in. cube, 4 parts; coarse clean gravel, 2 parts; clean river or pit sand, 1 part; Portland cement, 1 part; all measured in a box and well mixed together on a wooden platform, with a sufficiency of water sprinkled on through a hose, then tipped in the trenches, levelled up and slightly rammed.

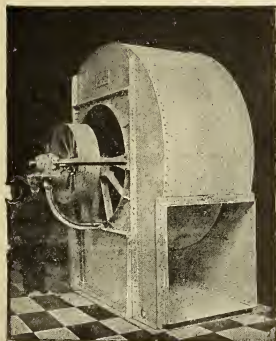
Mortar.—To be composed of clean, sharp sand, and freshly burnt lime, one-fourth black foundry sand, and three-fourths river sand.

The lime to be run into putty from a cistern, and mixed with the sand in the proportion of ¾ tons of sand to ten barrels of lime, all thoroughly worked together.

Sir Alexander Binnie's resignation as chief engineer to the London County Council will not take effect, it appears, until the end of the year. Sir Alexander, whom the Council are very sorry to lose, intends to resume private practice in partnership with two sons. It is understood that his services will then be available as consulting engineer to the Council. He has accomplished many great works for the London County Council, but the one that stands out most prominently in association with his name is the design and construction of the Blackwall tunnel. The tunnel, which is the largest subaqueous tunnel in the world, being 6,200ft. long and 27ft. internal diameter, cost about £1,400,000, including expenditure in the acquisition of property, erection of accommodation for displaced occupants, the deflection of sewerage, etc.

The present year is the centenary of Cardinal Newman's birth, and the Oratorians at Edgbaston are actively taking up the memorial scheme which has lain in abeyance since the Cardinal died. It is estimated that the memorial church will cost £23,000.

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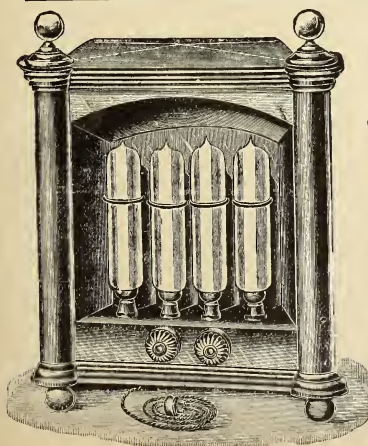
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DUBLIN.

TRADE JOTTINGS.

The additions to the Grammar School, Pontefract, are being warmed and ventilated by means of Shorlands' patent Manchester grates and patent extract ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Mr. Henry F. Cates, the courteous Dublin agent of the Vulcanite Roofing Company, having been requested to go to the London office, is compelled to give up their Dublin agency.

Mr. Thomas Archer, of New Row South, who is also the agent of the "British Luxfer Prism," succeeds Mr. Cates. During the time the company was represented by Mr. Cates in Dublin he succeeded in making vulcanite extremely popular amongst architects here.

Messrs. Brooks, Thomas, and Co., of Dublin, hold an agency for the Killaloe Slate Company, and have at present in stock a fine lot of these excellent slates, including the small sizes, such as 12 inches by 16 inches and 12 inches by 10 inches, whose use we have always so strongly advocated in preference to the more common large, thin slates.

Mr. James Melling, of Dashwood House, New Broad-street, London, has brought before the public a system of heating by means of electrical radiators, which merits more than passing mention. Of late years the choice of an ideal system of heating has become more difficult than ever. Electrical heating has been very generally condemned as inefficient, but Mr. Melling claims to have set things upon a better basis, and to have perfected a workable system of electric heating. He further claims that his radiators consume no air and produce no fumes, but radiate pure heat in all directions. They may be worked from any electric supply main, provided that heat lamps are fitted for correct voltage, and the connecting wires are of sufficient size to carry the current. The standard sizes of radiators with four heat lamps consume one unit of electricity per hour, but they may be turned down to one half, or turned off altogether by means of the switches supplied. They are usually found of ample capacity for warming rooms twelve feet square, and of the ordinary height. For large rooms, two or more radiators may be employed. The radiators are sent out complete with flexible connecting wires, ready to connect to customers' own plugs. Electricity is usually supplied at a great reduction for heating purposes.

Messrs. Collier and Proctor, the well-known Liverpool timber merchants, send us the following specification of their "Crescent" brand of pine doors, which arrived in Liverpool by the ss. "New England" on 18th inst.:-

MOULDED ONE SIDE.

	Inches.	Ft.	In.	Ft.	In.
200	1½	6	4	×	2 4
100	1½	6	4	×	2 4
99	1½	6	6	×	2 6

MOULDED TWO SIDES.

58	1½	6	4	×	2 4
452	1½	6	6	×	2 6
99	1½	6	8	×	2 8
100	2	6	8	×	2 8

SQUARE TWO SIDES.

27	1½	6	6	×	2 6
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O.G., MOULDED ON SOLID.

62	1½	6	4	×	2 4	6 Panels
200	1½	6	4	×	2 4	4 "
50	1½	6	6	×	2 6	6 "

BEAD AND BUTT.

90	1½	6	6	×	2 6
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1,537

413

1½ 6 6 × 2 6 M. 2 S.—4th quality

Total—1,950

Any inquiries addressed to Messrs. Collier and Proctor, Stafford street, Liverpool, will receive prompt attention.

A DEFINITION OF "SEWER" AND "DRAIN."

By BALDWIN LATHOM, C.E., Past President Society of Engineers, 1878.

Definition of the Word "Sewer" and "Drain."

The definition of the words "sewer" and "drain" in the present day simply means that drains become sewers in name when they are used for the conveyance of the sullage or liquid refuse from more than one house. So long as the liquid refuse of any one house is confined within a system of ducts that serve only the one particular house, notwithstanding its size and the ramification of the ducts, all these ducts are drains; but from the point where one house drain joins with another house drain, or with a duct conveying the sewage from a number of houses, from that point the drain becomes a sewer.

Callis on Sewers.

Callis, on the law of sewers delivered at Gray's Inn in August, 1622, speaking of the origin of the word, says:—"Some, minding the word, compound it of two words, *sea* and *vere*, saying that *nomina sunt consonantia rebus*; and there is some coherence between the name and the nature of the thing," and he further said that "the sewer is a fresh water trench compassed in on both sides with a bank, and is a small current, of little river."

A gutter was also defined by Callis as "of less size, and of narrower passage and current than a sewer is, and, as I take it, a gutter is the diminutive of a sewer." Speaking of the law, Callis said:—"The use of a sewer is common, and of a gutter, peculiar," and so it is in modern times, the right of user of sewers is common to all, but the right to the use of a drain is particular.

Mr. Robert Rawlinson—Quotation from Lord Coke.

Mr. R. Rawlinson, C.E., C.B., in a paper read at the Society of Arts in March, 1862, says, in reference to the origin of the word "sewer," that, "according to Lord Coke, a place where water 'issues,' or, vulgarly, 'sues.'"

Mr. Bailey Denton, M.Inst.C.E., Professor of Engineering at the Military School at Chatham, gives a definition:—"Definitions of the terms 'Drain' and 'Sewer.' I shall not have a better opportunity than I now have, when speaking of drying the soil, of explaining the difference between a drain and a sewer, which the Public Health Act, 1875, 28 and 39 Vict., Cap. 35, has done much to confuse, by attempting to give an interpretation, which is opposed to both literal meaning and common sense. In that Act we find that a "drain" is interpreted to be "any drain of, and used for, the drainage of one building only, for the purpose of communicating therefrom with a cesspool or other like receptacle for drainage" (drainage, I presume, means sewage) "of two or more buildings or premises occupied by different persons is conveyed;" while a "sewer" is stated to mean "sewers and drains of every description except drains to which the word drain, interpreted as aforesaid, applies, and except drains vested in, or under, the control of any authority having the management of roads not being the authority under the Act."

Now, the fact is, an underground "drain" means nothing more nor less than a conduit intended to draw out of the land through which it passes, the water which is in that land, and, as far as capillary attraction and natural retentiveness will permit, thus remove the wetness caused by it. The word drain is derived from the French verb *trainer*, to draw, and the precise meaning of the original word is "a channel to draw together water by degrees" the very reverse of the object of a "sewer," a word also derived from the French, the precise meaning of which is "a conduit for the discharge of filth."

What the Public Health Act interprets as a "drain" is really nothing more nor less than a branch sewer to "communicate (connect) the private dwelling with the public sewer, or with any private receptacle for sewage which may be used in the absence of a public sewer."

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by leading *Insurance Companies.*

As a **Damp-course** cannot be surpassed.

Suitable for all classes of *Permanent Buildings*
especially *Factories, Railway Sheds.*
Stores, and better class *Farm and Estate Works.*

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Weather-Proof

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Roofs erected more than 20 years ago are now in as good condition as the first day, and can be inspected.

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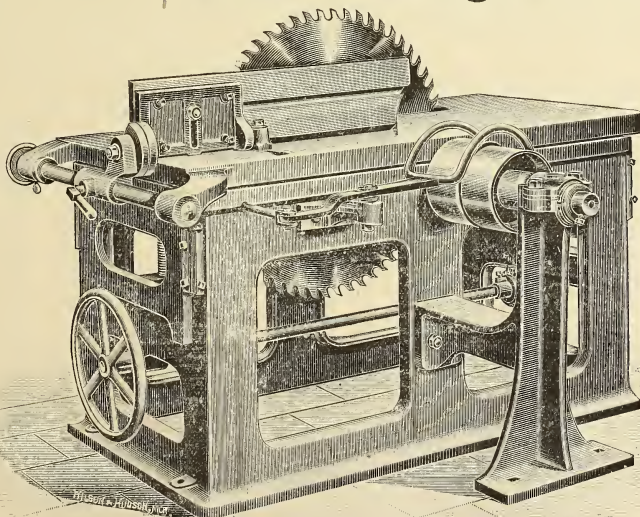
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Woodworking Machinery



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Catalogue
sent
free.

Machines
all best
make.

SAW BENCH WITH RISING AND FALLING TOP, R.T.

ARDEN WORKS, HALIFAX, ENGLAND.

NOTABLE BRIDGES OF THE WORLD.

Brooklyn Bridge was commenced, under the direction of J. Roebling, in 1870, and completed in about 13 years. It is 3,475 feet long, and 135 feet high. The cost of building was nearly £3,000,000.

The cantilever bridge, over the Niagara, is built almost entirely of steel. Its length is 810 feet, the total weight is 3,000 tons, and the cost was £180,000.

The Niagara Suspension Bridge was built by Roebling, in 1852-55, at a cost of £80,000. It is 245 feet above water, 821 feet long, and the strength is estimated at 1,200 tons.

The bridge at Havre de Grace, over the Susquehanna, is 3,271 feet long, and is divided into twelve wooden spans, resting on granite piers.

Tay Bridge, old bridge over the Tay at Dundee, destroyed December 28th, 1879. New bridge about two miles long; has 85 piers; height above water, 77 feet.

The Britannia Bridge crosses the Menai Straits, Wales, at an elevation of 103 feet above high-water. It is of wrought iron, 1,511 feet long and was finished in 1850. Cost, £600,000.

The new London Bridge is constructed of granite, from the designs of L. Rennie. It was commenced in 1824, and completed in about seven years, at a cost of £1,458,000.

The old London Bridge was the first stone bridge. It was commenced in 1176, and completed in 1209. Its founder, Peter of Colechurch, was buried in the crypt of the chapel erected on the centre pier.

Coalbrookdale Bridge, England, is the first cast-iron bridge. It was built over the Severn in 1779.

The bridge at Burton, over the Trent, was formerly the longest bridge in England, being 1,543 feet. It is now partly removed. Built in the twelfth century.

The Rialto, at Venice, is said to have been built from the designs of Michael Angelo. It is a single marble arch, 98½ feet long, and was completed in 1591.

The Bridge of Sighs, at Venice, over which condemned prisoners were transported from the hall of judgment to the place of execution, was built in 1589.

The bridge of the Holy Trinity, at Florence, was built in 1509. It is 322 feet long, constructed of white marble, and stands unrivalled as a work of art.

Clifton Suspension Bridge, at Bristol, has a span of 703 feet, at a height of 245 feet above the water. The carriage way is 20 feet wide, and the footways 5½ feet wide. Cost, £100,000.

Forth Bridge, over the Firth of Forth, near Edinburgh. Length, 8,008½ feet (about 2½ miles), exclusive of approaches, 5,349½. There are two cantilever spans of 1,710 feet each (the longest in the world). The piers are 360 feet above the water—the bridge itself is 150 feet clear above water—54,000 tons of iron and steel used, and 250,040 tons of masonry. Cost about 2½ millions. About 6¾ years in building. Ever since the bridge was opened, eleven years ago, the painting process has gone on continuously. Beginning at the south end, the workmen take three years to cover the entire length of the bridge, and, as three years represents approximately the life of the paint, no sooner are they finished than the men have to begin again. In this way every square inch of steel comes under observation at least once in three years. The staff of men varies in number from the maximum of thirty-five. In order to obtain access to the various parts, Mr. Adam Hunter, the resident engineer, has devised an elaborate series of ladders and lifts, which form no part of the original design. Wherever practicable, ladders, attached to the permanent structure, are used, but in order to reach the higher parts, it has been found necessary to provide lifts. There are three such lifts, worked by steam engines and winches placed almost out of sight a little below the level of the permanent way. At each hoist there is also a shelter-house, where the paint is mixed. In order to reach the parts below the rails, platforms are strung from wire ropes, run along either side of the bridge, and the platforms being movable, they can be pushed along the steel ropes on the principle of an overhead railway. The work is carried on under very difficult and dangerous conditions, but up to the present not a single life has been lost.

A YEAR'S FAILURES.

ANOTHER BAD RECORD IN THE BUILDING TRADE.

There was a considerable, though not an alarming increase in the number of bankruptcies in England during the year ended March 31st last as compared with 1899-1900.

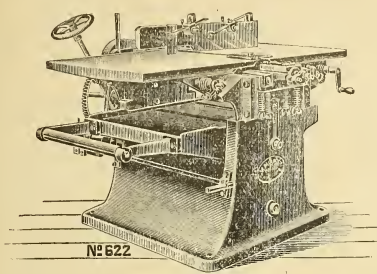
Taking bankruptcies and deeds of arrangement together, the Inspector-General in Bankruptcy states that there was an increase of 707 in the number of cases dealt with, the estimated loss to creditors being £838,653 greater than in the previous year.

The actual number of failures was 7,764, this being the largest total since 1805. The estimated loss to creditors was £8,361,824. Under the Bankruptcy Acts 1883 and 1890 there were last year 4,410 receiving orders issued. The estimated liabilities of the debtors amounted to £6,479,315, and the assets to £2,608,208, and the estimated loss to creditors was £5,590,302. There were increases under each of these heads upon the figures for 1899, the increase in the loss to creditors being £374,264. Under the Deeds of Arrangement Act, 1887, there were 3,354 deeds, the liabilities being estimated at £4,263,610, the assets at £2,486,913, and the estimated loss to creditors, £2,771,462. The increase in the loss over the previous year was £458,389.

The Registrar points out that out of sixty-four groups of particular trades, forty-one show an increase of liabilities amounting to £2,040,616, and twenty-three a decrease of £947,818. The largest increase is in the building trade, where 155 more cases and £421,396 more liabilities than in the preceding year are recorded. Following, as this does, a large increase in the previous year over the preceding three years, it is clear, says the Registrar, that this trade has received an abnormal and unhealthy development. The allied trade of contractors, while furnishing a smaller number of failures, shows an increase of £150,589 in liabilities.

Amongst the trades showing the largest total amount of liabilities are building, £1,154,720; metal trades, £359,210.

Recently the male inmates of the Exeter Workhouse as well as the elder juveniles, male and female, visited the well-known art studios of Messrs. Harry Hems and Sons, Exeter. They were received by the elder member of the firm, and all examined with great interest the various departments. The use of the skeleton and the art of modelling were fully explained to them, and the process of converting huge blocks of stone and marble and sturdy butts of English oak into the beautiful figures of saints and virgins was watched with no little intelligence by young and old. The statuary who were busily converting great blocks of grey Dartmoor granite into some memorials to stand upon the dreary veldt of South Africa, there to mark the last resting places of British officers who have fallen, attracted a melancholy attention. In the wood-carving shops a pale youth with a crutch (one of the visitors) produced a carved wooden kettle stand, which the professional experts at work considered showed more than ordinary ability. This circumstance produced an interesting story from Mr. Harry Hems, relative to a former inmate of Exeter Workhouse. A fatherless youth, John Way, was brought up, as a child, there in the middle of last century, and afterwards was apprenticed by the Guardians to a local chair-maker. Later on, the youth showing distinct artistic genius, became attached to Mr. Hem's staff, where he remained several years. Then he went to London, and having, by his remarkable ability, attracted the attention of the late Sir G. Gilbert Scott, R.A., the famous architect, who was then engaged (in the early '70s) restoring the interior of Exeter Cathedral, was sent down there as chief wood carver. In that capacity he remained some three years. The restoration of the Bishop's Throne, the finest thing of its class in the world, and much of the exquisite modern wood-carving, now the daily delight of visitors, was from the chisel of this once humble workhouse lad—John Way. Early hardships, however, had told upon a naturally delicate constitution, and he died of consumption in the village of Bicton, in 1878, at the age of twenty-nine years.



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of Wood - working Machines
used by Carpenters, Builders,
and Cabinet Makers.*

**THIS ONE MACHINE DOES THE WORK
OF TWO,** and does it right. It is not an
experiment. We have made over Nine Hun-
dred (900) of them. If you want a Machine
for Planing out-of-wind, making glue joints,
sticking mouldings, rebating, thickening
panels or any kind of stuff from $\frac{1}{16}$ in. to $7\frac{1}{2}$ in.
thick, corner or stop chamfering, planing,
straight or taper work, square-up or to any
angle, plane and mold skirting—in short, to
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in the Joinery and Cabinet trades, this is the
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B. & S. PATENT FOLDING GATES.

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LIFTS FOR ALL SERVICES.

AUTOMATIC TRAPDOOR AND SKYLIGHT OPENERS.

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QUIMBY ELECTRIC PUMPS, &c.

19, 20, & 21 TOWER ST., Upper St. Martin's Lane, LONDON, W.C.

BREVITIES.

Recipe for Damp Walls.—Take $\frac{3}{4}$ lb. mottled soap to one gallon of water, to be applied boiling over the surface with a brush (not to be frothed), leave it for twenty-four hours to dry, then apply $\frac{1}{2}$ lb. of alum to four gallons of water, leaving it for twelve hours to dissolve, and to be laid on as before. Hot weather is best for the application, or silicate solution where the walls are dry.

Depth of Keystone.—Depth of keystone, in feet, = $\sqrt{12} \times$ radius of arch at crown in feet. EXAMPLE:—Bridge over the Severn at Gloucester, 150ft. span, 35ft. rise; calculated depth of keystone, 4.37; actual depth, 4.5. This is upon the authority of Professor Paukine, and the bridge is by Telford.

Preservation of Concrete Surfaces.—In order to prevent the desiccation of concrete by the direct, or indirect, action of the sun, concrete surfaces should, on completion, be kept covered with a layer of earth, or sand, kept in a damp state. This covering should not be removed for a period of from three to six months, according to circumstances.

Glass in Stonework.—A good way for inserting glass between stone mullions, transom, and sill, would be to have them rebated in the usual way, fixing glass into same, bedded with zinc, lead, and putty, having holes drilled into mullions, transom, and sill, at distances to suit length of beads. Holes should be about $\frac{3}{8}$ in. diameter, and $1\frac{1}{2}$ in. deep, plugged up flush with good hard wood; then fix beads round the glass in the usual way—screwed into the plugs, which can be painted to match the stone. By unscrewing the beads, the glass can be refixed if necessary. Lead lights above the transom can be fixed in the usual manner, fastened to small horizontal iron bars.

There has just been completed a very curious piece of work at St. Paul's Cathedral, of which the public have seen nothing. The workmen have taken down, repaired, and refitted one of the large and heavy original lead waterpipes, which Sir Christopher Wren placed in shafts, constructed within the massive walls of the building. The walls are in some places no less than twenty feet thick, and Wren made in them a series of shafts—three feet by two in size—the primary purpose of which was to carry off the rainwater from the roof. With this object he placed large leaden pipes, eight inches square, in the shaft, reaching from the roof right down to the crypt.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

A.B. took a contract from County Council to build a bridge. C.S. specified to turn off water on the up stream side of the bridge, which was accordingly done. The dams remained down till the work was half way through. After they were pulled up by the owner of the land which the river passes through. The C.S. was frequently informed of these occurrences. A.B. suffered severely owing to not being allowed to keep down the dams, and was unable to get the bottom or floor cleaned out properly. Can part of the contract money be stopped for not having this done?

[We should say that it would depend largely upon the terms of the contract, also the extent to which the ultimate value of the work has been impaired. We believe that if A.B. took all reasonable precautions, such as notifying the County Surveyor and the police of the occurrences in question, that he cannot be held liable. Possibly as a measure of extra precaution he ought to have put on a watchman. But if he can establish the truth of what he states we believe no liability attaches to him, and it would, therefore, be illegal to stop any part of his contract money.]

—:o:—

As a general rule, the coins placed under a foundation stone lie undisturbed until the building falls into ruins, many years after, but in a recent case at Bury some persons evidently thought the good coin of the realm was going to waste, and, by knocking over the foundation stones of a new hospital, just laid, they obtained the sum of twelve shillings, which was not much for their trouble and the risk they ran. The more valuable pieces of money would appear to have got enveloped in the local newspapers that it is usual on such occasions to deposit beneath the stone.

—:o:—

NEW BOOKS.

BUILDING CONSTRUCTION: FIRST STAGE.

Adapted to the First Stage or Elementary Course of the Board of Education. By Brysson Cunningham, B.E., Assoc. M.Inst.C.E. London: W. B. Clive, University Tutorial Press, 157 Drury Lane, W.C., 1901. Price, 2s.

CLASSIC ARCHITECTURE. A series of ten plates of the Grecian and Roman Orders. By Charles F. Mitchell and George A. Mitchell. London: B. T. Batsford, 94, High Holborn, W.C. Price, 6s.

BUILDING CONSTRUCTION: ADVANCED COURSE.

By Geo. F. Mitchell, assisted by Charles F. Mitchell. London: B. T. Batsford, 94 High Holborn, W.C. Price, 5s. 6d.

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INCOMBUSTIBLE and FIREPROOF.

NOT AFFECTED BY CLIMATE OR ATMOSPHERE.

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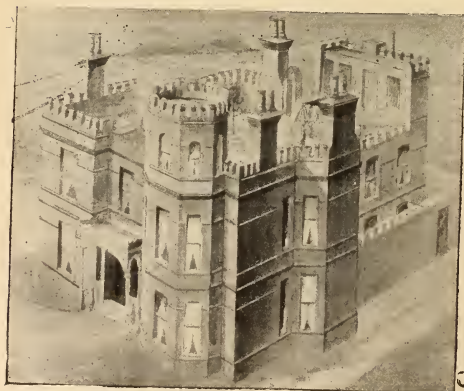
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Every Second Thursday.

[Estab. Jan 1859.]

No. 1,003—Vol. XLIII.

HEAD OFFICE

OCTOBER 10, 1901.

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DUBLIN.

Price 1d.

TOPICAL TOUCHES.

Waterford Corporation wants fifty tons of Portland cement at once.

We are asked to state that the Pulsometer Engineering Company have removed their offices to Reading.

The Most Rev. Dr. Lyster, Bishop of Achonry, will on Sunday next dedicate a new church in his diocese. It is known as "The Lake Chapel," and is most picturesquely situated, overlooking Lough Talt.

The first buildings of the Cork International Buildings are to be erected at a cost of £3,305. The contract has been secured by Mr. W. O'Connell, of Hanover-street, Cork, and work is expected to commence at once.

A stone cross has been erected in the churchyard of St. Mary's, Haggerston, in memory of a former vicar. The cross stands fifteen feet high, the base being ornamented with four panels in high relief, the subjects being the "Nativity," the "Crucifixion," the "Good Shepherd," and "Our Lady and Child." It is from the studio of Mr. Harry Hems, of Exeter.

The foundations of the extension of the Victoria and Albert Museum have been laid, and building is now proceeding. It will be three or four years, however, before the huge building is completed. The foundation stone was laid by Queen Victoria in May, 1899, but work was not begun until some time later. In digging deep for the foundation of the Central Tower, a stone of the glacial period was found, which may now be seen in the Natural History Museum, as well as a small but varied assortment of fossil bones, including those of an extinct species of ox, and a fragment of an elephant's skeleton, showing that elephants once roamed South Kensington. Mr. Aston Webb, an ex-president of the Architectural Association, and one of the luckiest men in the profession, is the architect.

For more than three weeks past water from the new Mourne supply has been coming into Belfast. It has been drawn direct from the Annalong River, and stored in the new service reservoir at Knockbreckan. By all accounts this reinforcement of the city supply came at a critical moment, when the Woodburn dams were drained almost dry, and when Stoneford was uncomfortably low. It was only last week, however, that the formal opening of the new service reservoir at Knockbreckan took place. By invitation of Mr. L. L. Macassey, C.E., engineer of the Mourne scheme, the members of the Water Board and a large party of friends, including the Lord Mayor and a number of representative public men, assisted at the ceremony. The opening was performed by Sir R. J. McConnell, Bart., D.L., who, it will be remembered, took a prominent part in initiating and carrying the scheme through.

The special "Students' number of the *Medical Press and Circular* reaches us. It contains a vast amount of useful information, especially to the parents or guardians of those contemplating adopting the medical profession.

The sanitation of Dundrum still continues to form a regular subject of discussion at the meetings of the Rathdown District Council. The village is most unhappily circumstanced. The sewers are of the most primitive character, and the sewage is disposed of in a manner which creates a regular nuisance.

The prospectus of the Pembroke Technical Schools reaches us. The syllabus of the classes comprises a sound and useful course of instruction, but the primary object of a technical school in a fishing centre, one supposes, would be the giving of instruction in the gentle art of fishing, but this is conspicuous by its absence.

An experiment at Kern, states *Petroleum*, has proved that a cheap pavement can be made by using petroleum on a basis of broken rock, super-imposing a deep layer of sand. The gravel that surrounded the place was covered with a layer of crude oil. Over this was placed a layer of yellow gravel, and when this settled into the oil, the result was a smooth and firm pavement.

The will of the late Mr. Robert Bayly, of the well-known firm of Plymouth timber merchants, has been sworn, the value of his estate being £446,000. Three-fourths of the income of £2,000 is to be paid to the South Devon Hospital, and the remaining fourth to the Female Orphan Asylum at Plymouth. The widow is left the income from £68,000, and the use of the residence and its contents. There are various bequests by Mr. Bayly to his sons and daughters. The residue of the estate is to be divided in equal shares between the three sons, the second son, Mr. Richard Bayly, to have the option of purchasing the timber business.

Everything was not "mock" at the Parish Church, Devonshire Village Bazaar, Exeter, for the purpose of raising funds for the new schools, etc., in connection with that particular Exonian parish. The village stocks, which were grimly in evidence, are the actual ones—affording accommodation for three reprobates—in use in the parish of Heavitree, an outlying district of Exeter, for several hundred years. They were last used early in the past century, their occupier being a jolly Falstaff, who had supped not wisely, but too well. Some time afterwards, with an apathy it is hard to understand, they were sold by the authorities to a local gentleman of title, who had an eye for the collection of all that was curious, and remained his property until death, when they were acquired by Mr. Harry Hems, and have now for some years stood an interesting feature in his pleasant grounds at Fair Park, Exeter. Not only are the stocks quite perfect and in working order (as many aspirants for novelty have already discovered at the bazaar) but the curious lock and key, so long used by the village "beadle" to clench the bargain, is also in a good state as well. There are heavy shackles attached, taking the form of a formidable cannon ball attached to an ominously rattling iron chain and slot.



Bangor.—A memorial window erected by the friends of the late Captain C. J. K. Maguire, of the Royal Scots Regiment, in Bangor Parish Church, County Down, has been unveiled by the Marchioness of Dufferin and Ava. Captain Maguire, who was killed in action at the Battle of Diamond Hill, Pretoria, on June 12, 1900, was a son of the Dean of Down. The subjects are Joab addressing his soldiers, and Christ in conversation with the Sisters of Lazarus. The parish church also contains a memorial window to the Earl of Ava, the eldest son of the Marquis of Dufferin, who was killed at Ladysmith.

Caledon (Co. Tyrone).—Lately in the Parish Church, Caledon, a memorial to the memory of the fourth Earl of Caledon, K.P., was unveiled. The memorial, which is a reredos in stone, extends across the base of the chancel window, and is supported at either end by a single Corinthian column of marble, and two columns of marble uphold it in the centre.

Cork.—The new Municipal School of Art and Technical Institute at Belfast was opened by the Marquis of Dufferin and Ava, three weeks ago.

Dublin.—The new central fire station for Dublin will have frontages to Great Brunswick, Tara, and Townsend-streets. The building will contain the working department and house accommodation for the chief and second officers, twelve married firemen and their families, and dormitories, kitchen, etc., for sixteen single men. The working department will comprise a large engine-house, with room for five machines, stalls at the rear for nine horses, officers, and watchroom, reserve stables, workshops, laundry, forage lofts, gymnasium and hose-drying tower. The second officers' quarters will be on the second floor, these and the gymnasium being immediately over the single men's dormitories and kitchen, which are on the first floor, directly above the engine-house. The married men's quarters will form a separate three-storey block at the northern end of the site. Each set of quarters will be self-contained, and include a living room, 15ft. by 14ft.; two bedrooms, 14ft. by 11ft.; bathroom, pantry, and lavatory. They will be approached by external iron stairs and balconies. The chief's house, which adjoins the station in Great Brunswick-street, will comprise three sitting-rooms, office, four bedrooms, dressing-room, kitchen, servants' room, bath, lavatory, etc.; the second officers' sitting-room, kitchen, three bedrooms, bathroom, and lavatory. The walls of the building will be of Irish bricks, faced with Portmarnock red brick, and roofs covered with Killaloe slates. The engine-house and stables will be paved with Dutch clinkers, the other floors formed of breeze concrete, supported on steel joists, and laid with boards, wood blocks, or tiles. The cost will be about £25,000.

Dublin.—RE-OPENING OF ST. ANDREW'S CHURCH, DUBLIN.—The re-opening of St. Andrew's Church, St. Andrew-street, after recent improvements, took place last evening, and the interest taken in the event was evidenced by a large congregation. An additional interest was given to the occasion by the presence of His Grace the Archbishop of Dublin, who preached the sermon and dedicated the new lectern and prayer-desk. The church presents a very attractive appearance, and it now may well be regarded as one of the most elegant in Dublin. For several weeks it had been in the hands of the contractors, Messrs. Sibthorpe and Son, by

whom it has been painted and decorated. The handsome brass eagle lectern, of Irish manufacture, was supplied by Messrs. T. R. Scott and Co., Middle Abbey-street, and the prayer-desk, of Bath stone and marble (a memorial to the late Archdeacon Wolseley, who for ten years had been vicar of the parish), was executed by Messrs. Sharpe and Emery, of Great Brunswick-street. The organ has been thoroughly cleaned and repaired by Messrs. Telford and Telford.

THE NEW CENTRAL BRIDEWELL.—This building, in close proximity to the Police Courts, is rapidly approaching completion, and in a short time will be in possession of the Metropolitan Police authorities. It is not externally what would be regarded as an imposing or artistic structure, but its interior arrangements will prove a vast advance on anything existing at the several police stations in the city. When the new station is opened, the present barracks of the D Division in Green-street, Manor-street, and Bridewell-lane, will be abolished. In connection with the new bridewell, a police station is erected capable of accommodating one hundred men, each constable in the new barrack being accommodated with a cubicle, containing a bed and table. All prisoners will be provided with separate cells, and a distinction, much required, will be made between new and old offenders, and the accommodation of the cells, which will be well lighted, will be based on the largest average number the police have had in charge in any given twenty-four hours, but, should the necessity arise, this accommodation can be extended. One of the greatest improvements in the new bridewell is the provision of a pillar in each cell, whereby prisoners brought in saturated with rain may have their garments dried, while warm clothing will be given to them. Electric bells will be supplied to each cell. When the new Bridewell is opened, from inside its gates the prisoners will be conveyed by an underground passage to the dock in the court, thus avoiding the unnecessary humiliation to which they are at present subjected.

CLONLIFFE.—The need for a permanent church in the Clonliffe district of St. George's parish has, during recent years, been sorely felt. This district lies in the northern part of St. George's Parish, between the Royal Canal and the Tolka River, and is about a mile and a half long, by about half a mile wide. It contains already a population of about 6,000, of whom nearly 1,700 are members of the Church of Ireland; and new houses are springing up in many places, new streets and terraces being built year by year, and the neighbourhood extending rapidly towards Glasnevin. The iron building in Clonliffe-road, which was licensed for public worship in October, 1881, by the late Archbishop Trench, was raised as a temporary expedient to meet the spiritual necessities of this district. It was originally seated for 150 persons, and had to be enlarged in 1884. But though now seated for 240, it cannot accommodate comfortably more than 200 persons. It is well filled and often overcrowded, to the great discomfort of the worshippers, especially as regards ventilation. The heat on bright summer days, and the closeness on winter evenings are often very trying. An excellent site has been obtained in a commanding position on Drumcondra-road, at the corner of Dargle-road. The residents in Clonliffe have subscribed liberally, according to their means, with a result that a sum of over £2,200 has been paid, or promised. The site cost £324, so there still remains a sum of about £1,900 towards the Building Fund. The contract for the part of the church which is being built at present (to accommodate 360 worshippers), amounts to £2,400, and about £400 more will be required for furniture and internal fittings, so the amount needed immediately is £900. Mr. R. Caulfield Orpen, Leinster-street, Dublin, is the architect.

Mullingar.—At a meeting of the Joint Committee of the District Asylum the following was read:—Report of special committee to consider the necessity for borrowing money for the completion of chronic block. Present—Sir Walter Nugent, Bart; A. E. Edgeworth, M. J. Wilson. The committee having gone exhaustively into the questions referred to them have reported as follows—(1) The first item of £2,000 under the head of "retensions" is correct under the terms of Messrs. Good's con-

tract, and is not properly an extra. (2) The item of £6,066 under the head of "additions" is accounted for by a number and variety of items which your committee have carefully examined, and the expenditure on which in most cases your committee is satisfied authority for these was given either by this board or by the Board of Control, except in the case of the item of "plastering," where the amount of about £1,500 has been incurred by an apparent error of the official measurer, who, in drawing up the specification for tenders for contracts, mistook the word "external" for "internal," with the result that the board made an insufficient demand for loan, and the contractor's estimate was consequently too low. Several further alterations were made by the Board of Control on its own initiative which entailed considerable outlay, e.g., drainage works, strengthening of walls owing to extra height of buildings, &c. (3) The item of £4,842 for electric light is correct and was approved of by the joint committee. (4) The furniture at £1,900 will be value for the money, at least £700 of this is at contract prices. The committee, therefore, is of opinion that it will be necessary to apply for a loan of some £15,000 to complete the chronic block, which is some £9,000 more than was originally intended, but in this £9,000 the electric installation, representing about £5,000, is included; and your committee desire to record the fact that most of this discrepancy arose owing to the causes which existed prior to the passing of the Local Government Act.

Mr. SHERIDAN said a charge had been made against Mr. Scott by the Board's architect, Mr. Joyce, which was altogether untrue, and he would ask Mr. Joyce now to either withdraw that charge or substantiate it. If this happened outside he would leave it to themselves, but when a charge was made at this Board against one of their officials, if that charge was unjust, they had a right to protect that official. He now asked Mr. Joyce to substantiate the charge.

Mr. JOYCE said he had made no charge whatever. What he did say was that his (Mr. Scott's) scheme was a copy of his.

Mr. SHERIDAN—There is not much in the difference.

Mr. JOYCE—There is a great deal. This was an official statement with regard to that matter. Mr. Joyce then read his report which he made at the time, and which purported that he (Mr. Joyce) had carefully read Mr. Scott's report so far as it dealt with the pumping machinery, and he entirely agreed with everything Mr. Scott had written. Acting on instructions of the Board he then prepared the specifications and maps, and then forwarded them to the R.M.S. and recommended tenders be advertised for. Then that was approved of by the Joint Committee, so that when he compared Mr. Scott's report with his specification they were actually the same, and as he (Mr. Joyce) said in his letter, he could not recommend anything else. He had provided himself with his specification, and, of course, he was perfectly right to do that. His specification went into absolute detail, and Mr. Scott's was a report recommending everything he had specified. He had nothing to say to Mr. Scott's report where it referred to the electric light; but as far as the water supply went he reported precisely as he (Mr. Joyce) had specified six months previously. He (Mr. Joyce) stated to the Board that the reports were identical, and that Mr. Scott's report was a copy of his scheme, and he could not recommend anything else with credit to himself.

Mr. EDGEWORTH considered Mr. Joyce's explanation satisfactory, and he moved that the Board approve of it as such.

Mr. SHERIDAN was not at all satisfied with the explanation made by Mr. Joyce. The fact remained true that Mr. Joyce had not entirely repudiated the charge he had made. The fact of Mr. Joyce's specification being written six months previously and Mr. Scott being called upon for a report on his own hook, and the two to be identical, that did not exonerate Mr. Joyce from the charge he had made—that Mr. Scott copied his specification.

Mr. JOYCE—I made no such charge. I never said he copied my specification.

Mr. SHERIDAN—You made a charge against Mr. Scott, and I ask you to withdraw it.

Mr. JOYCE—I have nothing to withdraw.

Mr. SHERIDAN again appealed to Mr. Joyce to withdraw, and the latter replied that he made no charge, and if he did he unreservedly withdrew it.

Newry.—On the 19th October, the Guardians of the Newry Union will consider tenders for the rebuilding of the Workhouse, in accordance with plans, specifications, etc., prepared by Mr. John Brown, architect, Newry, which can

be seen at his office during business hours. Bills of quantities can be obtained at the Clerk's office on payment of a sum of £2 2s., which will be returned to all persons sending in *bona-fide* tenders. Sealed tenders, giving the names of two solvent sureties willing to join in a bond for £5,000 for the due performance of the contract, will be received up to ten o'clock a.m., on Saturday, the 19th October. Mr. W. R. Bell is the Clerk of the Union.

A BEAUTIFUL CHALICE.

This Chalice was made for a convent near Dublin. It weighed nearly 300 ozs. 18-carat gold, and was set with diamonds, amethysts, topaz, and garnets. The repousse work represented scenes from the Passion of the Saviour. It



is one of the finest pieces of gold work we have seen produced. It has been made by Messrs. John Smyth and Sons, of Wicklow-street, Dublin, entirely in their own workshops, and is a testimony to the excellence of Dublin goldsmiths' work.

MEMORIAL TO THE LATE R. F. LIDWILL, T.C., J.P. BUILDER.

A marble headstone, with carved panels and caps, moulded on top, &c., executed in accordance with 13th century style of Gothic architecture, supported on Ballinasloe limestone base, and surrounded with curbing to match, neatly tooled, supporting an iron railing, has just been placed at the late Mr. Lidwill's grave in George's Burial Ground by his widow, and the following inscription is engraved in lead lettering:—

"Erected by his sorrowing wife, in loving remembrance of her darling husband, Robert Francis Lidwell, T.C., J.P., who passed away peacefully on the 28th December, 1900, aged 51 years. 'Trusting in his Saviour.' 'The Lord gave and the Lord hath taken away, blessed be the name of the Lord.'—Job I., 21."

The work was entrusted to Louis F. Harrison, sculptor, 29 Great Brunswick-street, Dublin, and is very creditably done.



Ballycotton.—The new church at Ballycotton, Co. Cork, is in the Romanesque style, and measures about 100ft. by 50ft.; the height of the ridge of the nave is 40ft., and to the cross of the bell turret, 70ft. The nave is 25ft. wide, and the aisles 12ft. 6in. each. The nave is separated from the aisles on each side by arcades of five bays, carried on beautiful columns of polished Aberdeen granite, with caps and bases of Portland stone. Above the bays of the nave there are on each side six clerestory cinquefoil windows, beneath which runs a string course internally of Portland stone. Between the chancel and nave there is a chancel arch, springing from polished granite columns, with Portland stone caps and corbels. There are two short transepts, gable-roofed, which contain the side altars, and the chancel portion of the aisles is separated from the body of the aisles on each side by arches. The nave roof is of richly wrought pitchpine, sheathed in the same material, and is of remarkable strength and solidity. The aisle roofs are of pitchpine similarly wrought. Near the western ends of the aisles there are gable-roofed porches, of material and workmanship similar to the body of the church. A winding turret stair of limestone leads to the organ gallery, which stretches across the western end of the nave, and beneath which there is a spacious porch. The walls, lined with Youghal brick, are externally of Little Island limestone, in pitch-faced ashlar masonry, set and pointed in cement.

Belfast.—The scheme for supplying Belfast with water from the Kilkeel and Annalong districts of the Mourne Mountains entered on its final stage on Tuesday, three weeks ago, when the new supply was turned on in the County Down side of the Lagan.

MOURNE EXTENSION WORKS.—Sir Robert J. McConnell, Bart., performed the ceremony of turning on to the city the new supply of Water from Mourne at Knockbracken reservoir. The portion opened is only a small item in the scheme, but it means that $4\frac{1}{2}$ million gallons of water per day will be brought into the reservoir, which is capable of holding 100 million gallons. On arrival at the scene of action Sir Robert was made the recipient of a golden key from Messrs. H. and J. Martin, and of a silver goblet from Messrs. Fisher and Le Fanu, who were the joint contractors for this portion of the works. The ceremony over, the guests were entertained to luncheon by Mr. L. L. McCassey, M.Inst.C.E., the board's chief consultative engineer, under whose control the entire undertaking has been since its inception. In response to the toast of his health, Sir Robert McConnell delivered an interesting speech, giving a short *resume* of the scheme. The scheme, when fully developed, was capable of yielding thirty million gallons a day. All the tunnels and masonry work were constructed to bring in that quantity of water, but at present the pipes were only laid down to bring in ten million gallons, but that could be doubled or trebled, as the needs of the city developed. What they were doing at present was to take the flow from the rivers, which for seven or eight months in the year would give them ten million gallons a day, and by using that flow in conjunction with the reservoirs of the existing works, sufficient water would be provided in the summer to tide the city over for several years. They hoped, however, at no distant date, to form a reservoir on the Silent Valley that would give them enormous storage accommodation, and later, when necessity required, another reservoir for which the site on the Annalong river can be utilised. At present it was only a question of expense with Belfast, in

order to have a water supply, which he had no doubt would do for many generations. They hoped, in a very short time, to be able to turn in also the water of the Kilkeel river. The works being carried out had brought the expenditure on the scheme to, in round numbers, £700,000. To complete the present works in hands would cost probably something less than £100,000. To construct the Silent Valley reservoir would require a further expenditure of at least £250,000, and to develop the entire scheme in order to bring in the entire waters of both rivers, a further sum of £300,000 would have to be expended, or making the grand total one and a quarter millions. He could not sit down without saying how much they were indebted to their engineer, Mr. McCassey, for that splendid piece of engineering. He had given it unceasing attention, and he (Sir Robert) was glad he was there that day to see the consummation of the scheme.

Clonmel.—**SANITARY IMPROVEMENTS.**—The local Government Board wrote in reply to the guardians' query *re* the sanitary scheme, stating they consider that there is nothing unusual or unnecessarily expensive in the designs for these improvements, which have now been for a long time under consideration. The amended plans greatly reduce the originally contemplated works, and the only point on which the guardians appear to have a doubt is as to the accuracy of the estimates of cost prepared by their architect. The guardians' architect was probably in a position to account of his local knowledge, but the Board consider that the best course the guardians could adopt was to invite tenders for the work, as no matter what the preliminary estimate may be, the real cost will be the lowest sum for which a contractor can execute the work. They could not undertake to furnish estimates or to revise architect's estimate for such work. In reply to a remark about the employment of a quantity surveyor, the chairman said Mr. Gardiner charged £75 for the first scheme, and refused to do the present scheme for less than £30.—Mr. O'Connell: We must have one, and we had better take his offer.—Chairman: The initial expenses will cost £400 or £500.—Mr. O'Connell: It will be as much more if you don't take up the work at once.—On the motion of Mr. Guiry, seconded by Mr. Kennedy, it was decided to accept the amended plans, the estimate for which is about £3,500. The offer of Mr. Gardiner to make out the quantities at £30 was also accepted, on the motion of Mr. O'Connell.

Dublin—(North Wall)—Under the direction of Mr Griffiths, engineer to the Port and Docks Board, the enormous works in connection with the sinking and building operations at the Morecambe Pier are progressing rapidly. Within the past thirty or forty years the entire quay wall on the south side from Creighton-street to the entrance to the Grand Canal, has been re-built. The piers used by the City of Dublin Steampacket Company and the London and North-Western have also been re-constructed within the same period, and the work now lying before the Port and Docks Board consists of similar reconstructions, or improvements at the piers of the London (British and Irish), Glasgow, and Morecambe steamers. As has been mentioned, work at the latter pier is in active progress, and Mr. Griffiths is sanguine that he will have concluded operations here by the spring of next year. Some thirty years ago at this part of the river a wooden jetty was constructed in front of the old wall, in order to give a depth at low water of some eight or nine feet, as, previous to this, vessels occupying the berth were, at low tide, left high and dry upon the mud, as the old wall was "founded" only at about low water level. In the case of the new wall, which is now in course of construction, the foundations are placed at a depth of some 20 feet below the low tide mark, so that the steamers using this berth can sail at all times, irrespective of tides. The section under construction at present measures some 500 feet in length, with a base of about 20 feet, gradually tapering to the coping, which measures 5 feet. The granite of the old wall has been used as far as possible where practicable—having, of course, undergone re-dressing—but the coping stones themselves—huge masses of granite—have been procured from the quarries of Aghrim. While work is in progress, the river is kept out by huge "piles" driven into the bed, as closely as possible together, and forming a series of dams.

These dams are pumped dry by powerful electric pumps, power coming from duplicate sets of Parson's water turbines, which also supply the necessary lighting in the cuttings and on the quay side, so that during the coming winter evenings the operations can proceed as easily as in broad daylight. A valuable feature of these turbines for such a work is that they require no masonry foundation or holding down, and can, consequently, be readily moved from one place to another, and, for engines of their weight, they are singularly free from vibration. Again, at the Spencer Dock, owing to the necessary repairs to the dock gates, this basin is, for the present, closed to shipping. The closing of this useful dock, connecting, as it does, the Grand and Royal Canals, is in several quarters considered exceedingly irksome, necessitating cartage across the city of goods which would, with the dock open, naturally be floated across the river without unloading. It is to be hoped that the repairs to the gates will be pushed on as rapidly as possible, so that the inconvenience may be removed. At the George's Dock a much-needed improvement is being carried out. This takes the form of the taking up and relaying of the footpaths, and although at the present time one side of the bridge is closed to pedestrians, the trouble of using the carriage way is not likely to seriously interfere with even the most fastidious business man. The repairs to this bridge are not expected to occupy many more days. The London and North-Western Railway, not content with extending and vastly improving their station at the North Wall, have decided upon extending their jetty and sheds, and to this end the Port and Docks Board have practically completed a building some hundreds of feet in length, running from the eastern end of the present jetty to the sheds of the Dublin and Glasgow Company. The new building has, on the shore side, some six openings, each being fitted with double sliding doors. The jetty is continued from the existing buildings, and is, of course, of similar height and width, and carried upon a solid masonry foundation.

Lurgan.—There was a lengthy discussion the other day at the Workhouse on the insanitary condition of the town.

Omagh.—GORTON WATERWORKS.—The Clerk said he had received a letter from Mr. Donnelly, architect, stating that he hoped to have the plans and specifications of the water works for Gortin ready in about three weeks. He regretted that this matter had been so long in hand.—Chairman: Three weeks more?—Clerk: Nothing can be done till the spring.—Mr. Baxter: They will object to pay for it.—Chairman: How long has this been in the hands of Mr. Donnelly?—Clerk: Six months. He drew up a set of plans and they were sent back for modification.—Chairman: It is a laughing stock to the community.—Clerk: You can say to him that the Board considers the matter has been too long in hands. The Clerk was directed to reply to this effect.

Portadown.—THE SANITARY CONDITION OF THE TOWN.—The report of Dr Clibborn, Local Government Board Inspector, on the sanitary condition of Portadown, has just been published in pamphlet form by Mr. Thomas Shillington, J.P., for distribution amongst the ratepayers of the town. Mr. Shillington explains the principal changes introduced by the Local Government Act of 1898 in the municipal government of towns. Proceeding, he says: "The town of Portadown is particularly favourably situated for securing healthy conditions for its inhabitants. Built on the valley of the River Bann, by means of which a constant flow of air is maintained through its centre, carrying off noxious vapours and bringing in continuously fresh supplies of pure atmosphere, there is no excuse for it becoming an unhealthy area; and it can only remain so through the culpable neglect of its inhabitants and of the authorities whose duty it is to see the sanitary laws properly administered. There is one fact regarding sanitation which should never be lost sight of—viz., that disease producing causes may, and often do, work silently for long periods without showing their deadly effects until they accumulate and then a virulent and fatal outbreak of disease causes widespread alarm, distress, and loss. And there is another thing, which universal experience warns us against—namely, that children and young persons brought up amidst insanitary surroundings are of low vitality, and easily succumb to disease,

and often grow up morbid and sickly. If the report errs in the severity of the strictures on any of the evils it alleges to exist, it scarcely sufficiently emphasises the danger arising from the discharging of the whole of the town sewage into the River Bann and its affluents—notably the Corgraine and Garvaghy Rivers. These streams are fast being converted into open sewers of the most offensive kind. From them most of the factories and public works draw their water, and the polluted state of these streams is most injurious to the health of the employees. The old sewers in the town, built of stone, have large quantities of offensive detritus and sewage deposited in them, and if a supply of water is introduced into the town before this sewage question is disposed of, most of the detritus will be carried into the rivers, polluting them still more foully, and some of it will no doubt be carried into the soil surrounding the course of the stone sewers, remaining a permanent danger when the soil is opened.

Thurles.—The Urban Council of Thurles want an engineer to prepare and submit plans, etc., for a water supply for the town of Thurles at a cost not to exceed £5,000. Plans to be laid before the Urban Council at their meeting on Friday, the 18th October, at seven o'clock. *"The Council will not hold themselves liable for any preliminary expenses in connection with scheme, unless engineer accepted!"*

Waterford.—PROPOSED SEWERAGE WORKS AT DUNMORE.—On the proposition of Mr. J. Murphy, seconded by Mr. P. Walsh, the tender of Mr. P. Harney, at £328 8s., for carrying out the above works, was accepted.

Waterford.—THE CITY SEWERAGE.—We have received from time to time several letters complaining of the condition of the streets, and winding up generally with the inquiry: "When will the sewerage scheme be complete?" We are able to answer that question now, on the authority of the Borough Surveyor. Mr. Fleming does not expect the scheme will be finished for a couple of years.

THE RAILWAY WORKS.—It is quite probable the railway line from New Ross to Waterford will not be finished for the same time. The contractors had hoped to have the railway completed this year, but they found the greatest difficulty in securing the necessary labour, hence the delay. Under the care of Messrs. Bennett, C.E., and O'Dowd, C.E., the work is now progressing satisfactorily.

Waterford.—THE PROPOSED YOUGHAL - DUNGARVAN LINE OF RAILWAY.—The Town Clerk read a resolution from the Youghal No. 2 District Council, in favour of the construction of a railway between that town and Dungarvan, via Cappagh, and advancing a variety of reasons in support of the project, one of which was the facility which the connection would give for railway communication between Rossclare and Cork, via Waterford.—Mr. Higgins said he had great pleasure in proposing the adoption of the Youghal resolution.—Capt. Toole: These people want to appropriate over £93,000 for the benefit of Cork.—The High Sheriff: This question was before the last meeting of the directors and shareholders of the Waterford and Limerick Railway Company, and everyone who read the speech of the chairman, Sir Percy Bernard, would have seen that that gentleman had stated the Great Southern and Western Company "were considering the matter," that is, the Dungarvan to Youghal, and the Fermoy to Cork projects, but that in their (the company's) present "hard-uppishness," they were not prepared to make any definite move at present. He (the High Sheriff) did not think that there was any necessity for a resolution from this Council.—Mr. Higgins spoke at some length in favour of the Dungarvan-Youghal line, via Cappagh, and pointed out that it would serve a district at present isolated from leading business centres, including the market city of Waterford, and the central western town of Dungarvan. He moved the adoption of the Youghal resolution. The matter was postponed.

Youghal.—NEW RAILWAY.—The question of bridging over the missing link in the south coast line of railways by running a short line between Dungarvan and Youghal, is just now agitating the public mind. Mr. Lawlor said the Great Southern were bound to run the line from Fermoy to Cork, or forfeit the £93,000. The resolution was ultimately adopted.

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TELEGRAMS—"WHEELMAN, DUBLIN."

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No. 1003

The National Gallery

THE report of the Director of the National Gallery, Ireland, for the year 1900, gives details of the pictures, drawings, and engravings which have been purchased and added to the collection during the period under review. Among these are the "Virgin and Child," ascribed to Jan Mostaert, and "The Dilettante," by Cornelis Troost. The donations include "The Flagellation," by Luca Signorelli, and "Naworth Castle." The late Mr. Henry Vaughan (London) bequeathed a series of thirty-one drawings by J. M. W. Turner, R.A., on the condition that they should be publicly exhibited only during the month of January in each year. The gallery has also received valuable additions to the general collection by the bequests of the late Miss Margaret M. Stokes and Sir Henry Barron. For the portrait gallery Miss Stokes also left a sketch portrait of Lord Edward Fitzgerald, by James Petrie, and a sketch for portrait of John Clarence Mangan. During December last there was an exhibition of works by the late Sir Frederic W. Burton. The fortunes of the National Picture Gallery of Ireland will always be associated with the name of the late Henry Doyle, C.B., Director, whose consummate taste and judgment, combined with an industry and skill as an art critic, enabled him to form a collection of pictures out of the meagre resources at his disposal—a collection which, for the small cost at which it was made, is a truly wonderful one, boasting, as it does, quite a respectable and even imposing collection of examples of the best masters. It has often been said that the Irish collection was brought together at a cost less than has been paid by the London National Gallery for one single picture. Still there is urgent need for a more liberal policy on the part of Government if a National School of Painting is to be created in Ireland. The art students here have neither the schools in which to learn, the examples to study, nor the means to take them abroad. Doyle seems to have always appreciated this, and spared no efforts to achieve good results in his annual picture deals. Constant in his attendance at sales in England, rummaging dealers' shops, and using an almost cunning diplomacy to add to his Gallery, he enriched the Irish collection with many a notable bargain.

Henry Doyle was the son of a Dublin artist, Richard Doyle, the celebrated "H.B." of *Punch*, whose work for that paper during Mark Lemon's editorship, ranked high in the illustrative art of his day. The inimitable frontispiece of *Punch*, still in use, was designed by him, and his signature, the "D." surmounted by a bird, a quaint conceit, setting forth his initials—the bird for "Dicky" and "D." for Doyle, may be noted on any copy of *Punch*. It may be of interest to note that Dr. Conant Doyle, the novelist, is a nephew of Henry Doyle.

Acetylene Gas.

Here is a convenience which is making its way for use in both summer cottages and permanent country houses. It costs less than fifty dollars to install both piping and apparatus for an ordinary house, and the running cost is said to be about the same as that of coal oil. At this rate it has the advantage that experiment does not involve a paralyzing expense, and we may feel at liberty to suggest its application to country work, without having any knowledge from experience of the quality of the light. It seems to be a pleasant and steady light, and has the advantage that, as the flame is very small, it does not easily flicker in the air. The light is, therefore, well adapted for out of doors use, for verandahs and to light paths and boat landings. There are many contrivances for the generation of the gas. The contact of water and calcium carbide is all that is necessary, and the aim of the best contrivances seems to be to generate gas only as it is needed. The release of pressure by turning a tap brings, in some cases, water to the carbide; in others, carbide to the water, just in proportion as it is needed; that is to say, in proportion to the release of pressure, or to the taps turned on. The facility of application in quantities as needed seems to tend not only to economy, but to safety. There is a residuum of slaked lime which requires to be drawn off two or three times a week; an accumulation of a few buckets of which may, perhaps, be made useful.

Cheapness and Nastiness.

FEARFUL and wonderful are the ways of some of our Irish local authorities. A few specimen cases have just reached us from the provinces. The first emanates from Thurles. It would seem that Thurles badly needs a new water supply, the existing supply being little less than a choice cultivation of pestilence. Several years ago a scheme was mooted, but eventually shelved. Now something has got to be done, and in its wisdom and spirit of economy the Urban Council invites engineers to draw up schemes for the water supply of a town of some 5,000 inhabitants, and submit their ideas to the Council. There is no word of an assessor, no suggestion as to who shall advise on the selection of a design; but instead there is the rather ominous reservation that the Council does not intend to pay anything "unless the engineer be appointed!" Now, to anyone who knows the enormous trouble involved in prospecting for a water supply, in working out the details of the scheme, the injustice of this and the stupidity are self-evident. No reliable man will compete in a competition held under such farcical conditions. We believe the cost of the first scheme was estimated at £12,000 to £16,000, so our readers can have some idea of the work to be done.

Another choice example of unbridled extravagance—this time on the part of the noble-minded Guardians of the Clogheen Union, who are now ready and anxious to "receive applications from qualified persons for the position of Engineer to Board, at a salary not exceeding £20 per annum. The person appointed must be prepared to do all work in connection with Poor Law and Medical Charities Acts, and the Guardians reserve to themselves the right to dispense with his services whenever they think necessary. Applications, accompanied with testimonials as to suitability, and containing the names of two sureties willing to enter into a bond for due performance of duty, will be received up to 12 o'clock on above date."

Our readers will note the princely munificence of the salary, coupled with the generous regard for faithful service. The Guardians seemingly desire to reserve to themselves the right to the luxury of a periodical dismissal of their engineer, for the

operation of "dispensing with his services" is to be performed "whenever they think necessary." Unhappy engineer!

At the Sligo District Lunatic Asylum the architect, Mr. T. M. Deane, A.R.H.A., was consulted on the subject of a new laundry, etc. Some time later, when the items of his account were under discussion, a charge for this service rendered was observed, whereupon the Resident Medical Superintendent calmly informed the committee that he and the Clerk of the Works had "inspected" the laundry of the local Convent and "adapted" plans therefrom. On this the committee, of course, refused to pay the architect!

A very bad case comes from Oldcastle Union. Messrs. Anthony Scott and Son, A.R.I.B.A., of Drogheda, were the architects for a Labourers' Act scheme. One of the useless red-tape formulæ required by the Local Government Board is an enlargement of the sites marked on the Ordnance maps to a scale of 200 feet to the inch. This item is, of course, always done by the architect, but he usually claims a fee for it. In the present instance, having been called on to furnish these enlarged site plans, the Guardians proceeded to discuss the feasibility of giving the work to the architects for the scheme! but in their wisdom decided to entrust this work to a small local contractor named Grace. Of course, the architects' maps and schedules remain in the hands of the Clerk to the Council, and from these the maps must be copied. It is nothing less than a public scandal that the Local Government Board sanctions such appointments as these.

Things seem at times to be almost as bad in England, if we may accept the following extraordinary case as typical of the methods of English local authorities. Our contemporary, *The Surveyor*, in some recent remarks, observes:—

"ADMINISTRATIVE INTELLIGENCE!"

"The Startforth (North Riding) Rural District Council recently had occasion to appoint a sanitary inspector. In the columns of *The Surveyor* we are only indirectly concerned with the work of the sanitary inspector, but this particular case is so rich an example of the administrative eccentricities to which, unfortunately, we have to call attention in connection with the appointment of surveyors by the smaller councils, that our readers will, no doubt, be interested in the details. There were forty-nine candidates, who, we read, hailed from all parts of the United Kingdom—a somewhat difficult feat for only forty-nine men to accomplish! Then a member, who had the title of major, though whether of the militia, the regulars, or the volunteers does not appear, got up and "moved that the names of the whole forty-nine be put into a sweep and forthwith balloted." They would then, he added, retain the names of the highest six, for they could not read such a heap of testimonials. The chairman was aghast, and asked, as well he might, how they could possibly pick out the best man if they knew nothing of his qualifications. Undeterred by this poser, another member moved, as an amendment, that each councillor write down the names of six candidates, and that the testimonials of these six be read. This proposal was at least as wise as the other, but it did not commend itself, and the original motion was carried. The chairman could stand it no longer, and, after describing the proceedings as dishonourable, he vacated the chair and left the room. It may safely be asserted that the majority of the councillors had one or two local men in view among the candidates, and that for these they intended to vote, regardless of the trouble to which the other candidates had been put. It remains to be seen whether the Local Government Board will sanction an election conducted in this unscrupulous way."

— O —

Messrs. Pearse and Sons, of 27 Great Brunswick-street, Dublin, have received the order for the High Altar for St. Patrick's Church, Trim. The altar will be carved out in Sicilian and Carrara marbles, and will be one of the largest in Ireland. Mr. W. H. Byrne is the architect.

The Cuckfield Isolation Hospital, near Burgess Hill, is being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

THE NEW CHURCH, CASTLEBAR.

THE HISTORY OF A REMARKABLE UNDERTAKING.

The new church of Our Lady of the Rosary, Castlebar, has at length reached the stage of completion, and is now, with the exception of the spire, furnished and equipped for divine services.

An Eventful History.

Few who recollect the eventful and somewhat chequered history of this project but will be astonished at the completeness to which the work has now attained. The idea of building a church for the town of Castlebar is no notion of yesterday's conception; so far back as "the sixties" the then parish priest set to work to gather money to build a church, and in 1872 he had so far succeeded that the foundations of a church were laid. For a little while the enterprise progressed most happily.

Abandonment of the First Project.

Mr. J. J. O'Callaghan, of Dublin, had furnished a design for a large and handsome structure, and prospects seemed sufficiently bright to warrant the further progress of the work—so much so that the new church rose rapidly under the builder's hands; the aisle and walls were almost ready for the roof, when, suddenly, a period of depression set in in Ireland, and, despite the efforts of the pastor, work had to be suspended. A collecting tour in America brought little relief, and the death of the parish priest caused the work to come to a standstill. From that time on, during a long series of years, bad times and various other causes prevented any steps being taken.

The Great Need for a Church

All the while the need for a suitable place of worship for the Catholic people of Castlebar was, day by day, increasing. The old structure, which so long had served its purpose, fell rapidly into decay; and, unlike most other Irish towns, Castlebar had not even the painful relief of a dwindling population, for Castlebar has, happily, an increasing population.

Revival of the Project.

Not until the appointment of the present P.P., the Rev. Patrick Lyons, was the project revived. On his entering on the incumbency of the parish, Father Lyons set to work to vigorously, and so far succeeded that in 1891, as the result of a limited competition, in which Messrs. W. H. Byrne, the late John L. Robinson, R.H.A., and Walter G. Doolin, M.A., took part, the designs of the latter architect for a new church were adopted.

The Church at Last Started.

But still the Fates were not kind, and, from one cause or another, it was not until 1897 that it was deemed practicable to proceed with the active work of building. In that year the new church was begun, under auspicious circumstances. It should be explained that for many reasons it was not deemed possible to complete the derelict church of 1872, as the structure had, through long years of exposure in an unprotected state, become more or less unstable, the size of the church was now considered hardly equal to the needs of the large congregation, and an alternative site was preferred. But full use was made by the architect of all the material of the derelict church, and they are to-day embodied as part and parcel of the new church, not a single stone going to waste.

The Terrible Gale of December '99

The work of building proceeded apace until once again the walls of a new church for Castlebar were ready for the roof, when, in the terrible gale of the December of 1899, just as the props had been removed from the massive nave walls, a terrific hurricane caught one wall and brought it to the ground. With much promptitude and energy the work of making good this damage was gone on with. From thence on the work proceeded happily, and without interruption, until now the people of Castlebar may congratulate themselves on the possession of a church which, probably the largest west of the Shannon, may be regarded as amongst

the most completely equipped and suitable for Catholic congregational purposes in Ireland.

DESCRIPTION OF THE CHURCH.

The Exterior.

The new church is of an early English type, and consists of a nave, aisles, transepts, chancel, side chapels, sacristies, and tower. The exterior of the church is faced with Mayo limestone, with dressings of the same. The western front faces the road, and its main features are two tracery windows, with a traceried rose window in the gable. In the



centre of the west front there is an elaborate pedestal and canopy for a figure of Our Lady of the Rosary, thus at once indicating the dedication of the church. On one side the western front is flanked by the baptistery, and on the other by the tower. The eastern end of the church gains considerable dignity and importance by the natural conformation of the ground, which slopes away rapidly from west to east, down towards the river. Advantage has been taken of this to form burial vaults under the chancel.

The Interior.

Internally, the church conveys an exceptionally dignified impression of length and spaciousness. The lofty nave arcade of seven bays conduces much to this effect. At the western end the entrance is through a spacious narthex, and the nave itself is entered by an arcade of three arches carrying the organ loft. This arcade is a very elaborate piece of work, carried out in freestone, with quatrefoil limestone shafts. Looking eastward, the chancel, of course, is the centre of the view; it terminates with a square east end, pierced by a five-light lancet window. The high altar, of pure white Carrara marble, is the central feature. In the side chapels there have also been placed in position side altars of rich and elaborate character. A fine floor of tiles, of special design, is used in the chancel and chapels, which are enclosed by white marble Communion rails. The roofs throughout are of sturdy design, and open timbered. For the general body of the church, wood block floors of teak, oak, and pitch pine are used. The church is heated by hot water apparatus, and it is hoped, at no distant date to have electric lighting plant in full swing.

The Principal Dimensions.

The total length of the church is 180ft.; breadth across transepts 66ft.; breadth across nave and aisles, 67ft.; width of nave, 25ft. (in clear); height from ground to eave of nave 41ft.; height of spire (uncompleted), 200ft.

The Contractors.

The general contractor was Mr. John B. Healy, of Tralee. The contractor for the organ gallery and the carving was Mr. J. A. O'Connell, of Cork. Mr. William O'Connell, of Cork, made the entrance screens and some of the seating; Mr. Andrew Cullen, of New Ross, the richly carved confessionals. Messrs. Cane and Gunning, of Dublin, supplied the elaborate solid wrought brass gates to the sanctuary and chapels, and a wrought brass corona for the chancel. Messrs. John Fagan and Sons, of Dublin, the wrought ironwork and lightning conductors. The tiling of the chancel and chapels is by Messrs. Craven, Dunnill, and Co.; the tiling of the narthex, baptistery, etc., was supplied and fixed by Mr.

J. C. Edwards. The heating is by Messrs. Musgrave, of Belfast. Messrs. Ward and Partners, of Belfast, supplied some very excellent leaded lights; while Messrs. Jas. Pearce and Sons, of Dublin, are responsible for the three altars. Mr. J. F. Ebner did the wood block floors throughout, and Messrs. T. and C. Martin, the seats. All these works were carried out from the designs of the architect, Mr. Walter G. Doolin, M.A.

NEW BOOKS.

BANKS AND THEIR CUSTOMERS: A practical guide to all who keep banking accounts. From the Customer's point of view. By Henry Warren. London: Eppingham Wilson, Royal Exchange, E.C. 1901. Price, 1s.

A most useful little guide to the practice of banking, one which should prove valuable to builders and contractors, who often have to deal with large sums of money. It is concise, and many useful hints may be gleaned from it; for instance, note the following:—

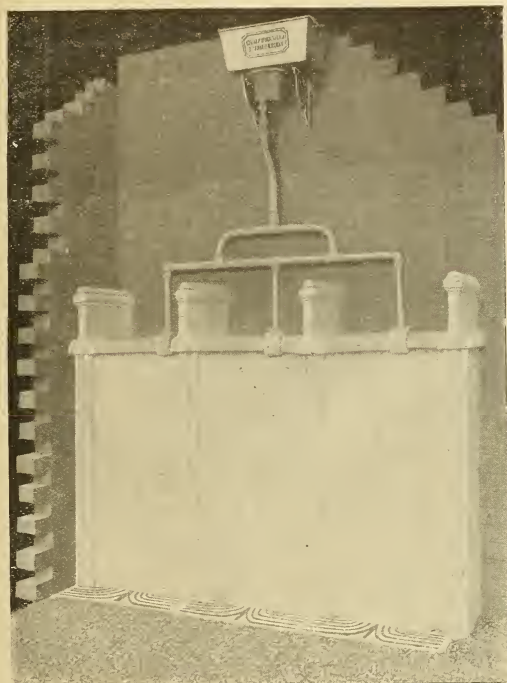
AN OUT-OF-DATE CHEQUE.—Most bankers would probably decline to pay a cheque which had been outstanding more than six months. The drawer, however, does not cease to be liable upon the instrument until six years after the date thereupon; though he may claim damages against the payee if he can prove that he has suffered loss through his delay.

PRESENT YOUR CHEQUES AT ONCE.—A business man, in order to give himself every chance, will pay all cheques to the credit of his banking account upon the day he receives them from his customers. He has, in the legal sense, until the close of the first business day following the day he receives, when, if he likes, he can post it to his agent, who has a like time allowance, provided the cheque be not drawn upon a bank in his own town. If he neglects to do, any loss incurred by the drawer through non-presentation, will fall upon the payee's shoulders; for instance, if the bank smashed, the payee would be saddled with a bad debt, through his delay in presentation.

Effect of Prices of Materials on Building.—Inquiry among architects goes to show that while the present building season has been an active one, and, on the whole, satisfactory, many projects have been abandoned, temporarily, at least, on account of the high price of lumber and some other materials which enter largely into construction work. Persons who contemplate building frequently forget that the present is a period of high prices for all other materials, as well as those employed in building. It is scarcely possible to purchase an article of any description to-day as cheaply as five years ago. Why then expect to get buildings put up as cheaply now as then? The advance in prices is due to a strengthened demand, or, in other words, to increased prosperity. Vastly more money is being made by all classes this year than five years ago, hence the purchasing power is increased. Most persons contemplating the erection of buildings can well afford to pay say 20 per cent more for their structures than would have sufficed for their erection in the times of depression. In many localities land values have gone up to an extent sufficient to offset the extra cost of building. So far as lumber, the staple building material, is concerned, the supply is rapidly decreasing every year, and higher prices must, therefore, be expected to rule for the future. No doubt when landowners shall have become thoroughly seised of the above-mentioned facts, they will see the unwisdom of pursuing a policy of delay in the carrying out of their projects.—*The Canadian Architect.*

— O —
"Velure" is a wonderful paint for which Messrs. Dockrell and Sons are the Dublin agents. It is claimed for it that in addition to the beautiful surface produced, it works out cheaper than ordinary paint.

Messrs. Pearce and Sons have secured the order for the Communion railings for the House of Retreat, Inchicore, Dublin. It will be in Carrara and coloured marbles, onyx and pink Middleton predominating. Mr. G. C. Ashlin is the architect.



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FORM OF BLOCK.





A.A.I. JOTTINGS.

The winter work of the Architectural Association of Ireland has begun, the annual meeting being held on Tuesday, October 8th, when the President delivered his inaugural address, the prizes of the past session were presented, and business discussed.

The President for this session is Mr. Charles J. MacCarthy, the City Architect, and under his guidance it is hoped and anticipated that a good session's work will be accomplished. All through last session great enthusiasm was manifested in all the work of the Association, and this enthusiasm should continue.

The fixtures for the session include papers and lectures by Mr. Orpen and Mr. Sheridan—both past Presidents—and Mr. Hicks, last year's Hon. Secretary; also several papers which it is expected will be of great use and interest.

In the classes, programmes have been prepared for the entire session. The first meeting of the Architectural History Class takes place on Tuesday, the 15th, and the classes of Design and Building Construction, occur on alternate Thursdays.

For some time past it has been realised that it would be desirable to obtain better quarters in which to hold the general meetings; the library, also, has been found much too small for the purpose of class meetings. It is therefore satisfactory to be able to announce that arrangements have been come to with the Council of the Royal Institute of the Architects of Ireland whereby the use of the Institute Rooms at 20 Lincoln-place, have been secured to the Association for the purpose of holding general and Class meetings. The Council of the Institute have also kindly given the use of their rooms for the purpose of holding an exhibition of the prize and class drawings of the Association. This exhibition will take place during the week commencing on October 21st.

The usual prizes are offered for competition this session, and in addition there is Mr. W. G. Doolin's prize for sketches, open for competition.

The Library at 22 Clare-street is assuming large proportions, the Lending Library having been largely added to lately.

PROGRAMME FOR OCTOBER.

- 8.—Annual meeting. President's address, etc.
- 15.—Architectural History Class. Introductory.
- 17.—Building Construction Class—Foundations and Concrete. Mr. T. Hudman.
- 21-26.—Exhibition of Drawings.
- 22.—General meeting—Furniture and Fittings. Mr. R. C. Orpen.
- 24.—Class of Design—Villa. Mr. R. C. Orpen.
- 29.—Architectural History Class—Greek Architecture.
- 31.—Building Construction Class—Brickwork. Mr. A. G. Millar.

The usual Smoking Concert will also be held some time during October.

Messrs. Pearse are at present erecting a marble High Altar at Blair's Collage, Aberdeen, to the order of Most Rev. Dr. Chisholm, Bishop of Aberdeen. The same firm have in hands marble High Altars for Nairn and Dingwall.

OUR ILLUSTRATIONS.

BELFAST CITY HALL.

This building stands in the centre of the principal square of Belfast, on a site 462ft. by 341ft., in the foreground of which a statue of Queen Victoria is to be unveiled by the King in the early part of next year. The four main thoroughfares of the city lead from this square, the principal street, which is 80ft. wide, being central with the dome, the principal feature of the building being designed to come within the limits of the width of this street, and will give a view for a distance of half a mile.

The whole building stands on soft subsoil, common to a very large area of Belfast, the whole site being piled with 14in. piles, 45ft. long, except to the dome, which are 60ft. long, the horizontal timbers and steel joists connecting the top of the piles being embedded in a layer of concrete 5ft. thick.

The four external facades, the facades to the internal courtyard, and the dome and angle towers are faced with Portland stone, the main dimensions being 300ft. and 250ft. by 60ft. externally, and 197ft. and 127ft. by 60ft. internally.

The building is completed as far as the under side of the main cornice, the roofs not yet being on.

The architect is now laying before the Corporation, schemes of general internal decoration, and has just received tenders for the marble treatment of the interior of the dome and principal staircase, the lowest being that of Messrs. Farmer and Brindley, amounting to £25,600. The architect is Mr. A. Bramwell Thomas, of Queen Anne's Gate, London.

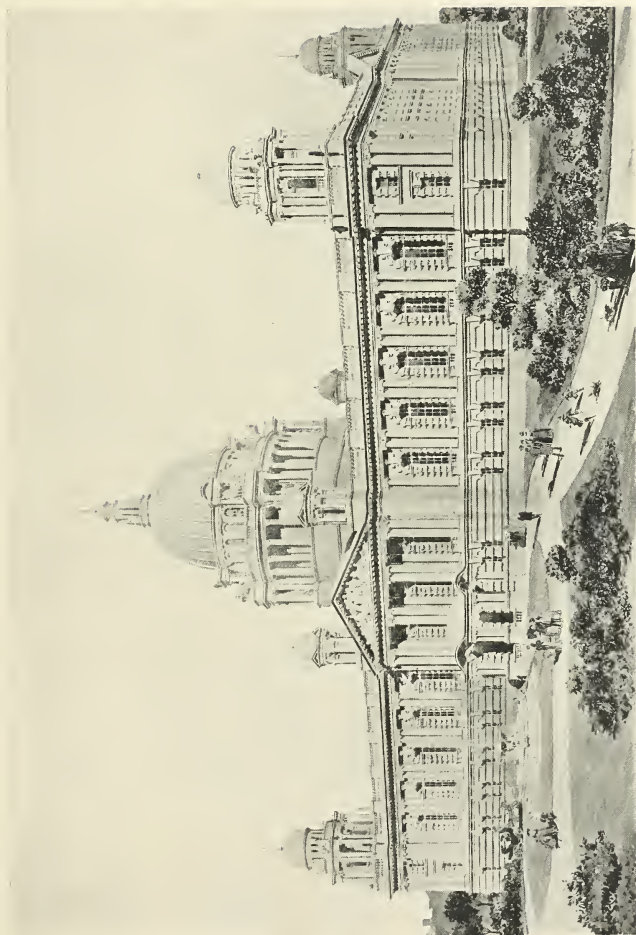
When completed, it is anticipated that the building, including site, will cost upwards of a quarter of a million pounds.

We are indebted to the courtesy of our contemporary, *Stone*, for permission to use the illustration issued with this number.

Useful Mems about Painting.—Spon's Tables gives the following particulars:—Lead Paint.—First coat.—One pound covers about $4\frac{1}{2}$ yards super, following coats $6\frac{1}{2}$ yards super; painter's day's work—first coat of paint on wood 60 yards super, following coats 70 yards super; varnish takes about 1 gallon to 60 yards; painter's day's work—laying on varnish 40 to 50 yards. In protective properties one coat of Velure is equal to at least two coats of lead or zinc paint and one of varnish; one gallon will cover 90 yards super if carefully applied on a good groundwork of ordinary paint. The following comparative estimate based on these particulars speaks for itself:—Cost of painting 90 yards super.—When using (a) lead paint and varnish.—Lead paint at 4d. per lb.—20 lbs. cover 90 yards super—first coat, 6s. 8d.; labour, $1\frac{1}{2}$ days (60 yards per day) at 6s. per day, 9s.; lead paint—two following coats, say 14lbs. each—28 lbs. at 4d., 9s. 4d.; labour—two following coats, at 7s. 9d. per coat, 15s. 6d.; varnish—one coat, $1\frac{1}{2}$ gallons at (say) 8s. per gallon, 12s.; labour applying same—40 to 50 yards per day, say 12s.; total cost, 3 coats lead paint and 1 coat varnish, £3 4s. 6d. When using (b) velure.—Lead paint, 6s. 8d.; labour, 9s.; Velure, 1 gal., 19s.; labour, 12s.; total cost, £2 6s. 8d. Total saving, 17s. 10d. The makers of Velure are Messrs. C. Chancellor and Co., of London, and their Dublin agents are Messrs. Dockrell and Sons.

Whitewash for Outside Use.—Take a clean water-tight cask and put in half-bushel of lime. Slake it by pouring boiling water over it to cover it 5in. deep, stirring briskly meanwhile. When slaked, dissolve 2lb. sulphate of zinc and 1lb. common salt in water, and add the lime solution. By adding 3lb. yellow ochre, the wash may be made of a delicate cream colour. Apply with ordinary whitewash brush. Very durable, and of excellent appearance.

The *Master Builders' Association's Journal* "has noted with pleasure that the *IRISH BUILDER* has made big strides." We thank our esteemed contemporary for such kindly expressions of goodwill.

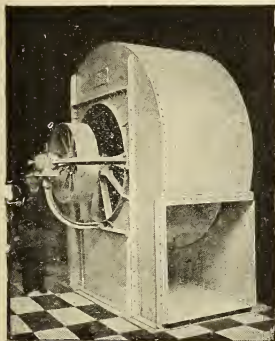


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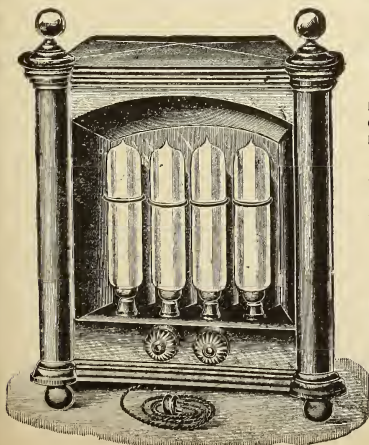
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BUILDING NEWS.—Continued from page 889.

Dublin.—**MEMORIAL IN GLASNEVIN CEMETERY.**—The other afternoon an impressive function took place in Glasnevin Cemetery on the occasion of the unveiling of a handsome memorial to the late Patrick J. Lawlor and Peter J. Murphy, members of Lord Iveagh's Irish Hospital Corps, who died in South Africa from disease. The memorial was formally unveiled by Captain the Hon. Rupert Edward Guinness, representing Lord Iveagh, who was unavoidably prevented from attending. There was a large gathering present, including the relatives and friends of the deceased, as well as many of their comrades in the Corps, and the greatest interest was manifested in the proceedings. Sir William Thompson then addressing those present said it was

6 ft side of the arm. This has been very effectively worked, while the base of the cross is encircled by a wreath of laurel leaves resting on the top of the rockery, on the right of which lies a *fac-simile* of the hat worn by the men, and on the left of the inscription is the armet. The inscription is as follows:—
"To the memory of Patrick J. Lawlor and Peter J. Murphy, Orderlies of the Irish Hospital, who died in South Africa, in the year 1900, of disease contracted in the discharge of their duty. This monument has been erected by their comrades of the Irish Hospital. R.I.P." The whole monument has been carved out of one piece of Ballinasloe limestone at the Monumental Works of Messrs. C. W. Harrison and Sons, under the supervision of Mr. L. A. McDonnell, architect.

Cork.—The Cork International Exhibition Company, 1902, is prepared to receive Tenders for the erection of a restaurant. General conditions and specifications may be seen and bill of quantities obtained at the office of Mr. Henry A. Cutler, A.M.I.C.E., Municipal Buildings, Cork, on payment of one guinea. Sealed tenders, endorsed "Restaurant," must be delivered at the office of Mr. R. A. Atkins, Hon. Sec. Cork Exhibition Co., not later than Thursday, the 17th October.

Newry.—**THE REBUILDING OF THE WORKHOUSE.**—The Clerk read a copy of the advertisement he had drawn up for tenders for the rebuilding of the workhouse, tenders to be sent in by the 12th October. The form to be sent to the L.G.B. had now been signed by a sufficient number of guardians. In answer to questions, the Clerk said it might be as well to alter the advertisement that tenders be received on the 19th instead of the 12th.—Mr. Small called attention to the resolution, of which he had given notice for that day week, that members of a religious order be appointed as nurses. The Bishop of Down was also in favour of it. If the Board should determine upon the alteration, it would be necessary to consider the matter before sending in the advertisement. He thought a portion of the larger ward could be utilised as a chapel for the Catholic inmates, and the upper ward would afford sufficient room divided into four apartments for members of any religious bodies that entered the house. If the L.G.B. insisted upon the Sisters being in front of the house it might not do, but he agreed it would be far better to have the matter settled right off, and that there should be no extras. The Board should settle first if they would introduce the religious orders before coming to a final decision.—Mr. Moloughney asked what was the total cost. Is it £4,750?—The Chairman said it would possibly be only £4,000.—Mr. Moloughney asked whether the accommodation that would suit an ordinary nurse would not suit a member of a religious order without going to further expense in connection with the rebuilding of the house.—The Chairman said if a religious order was introduced they would require alterations, but he could not say what would be the cost.—The Chairman thought the nurses could be accommodated without interfering with the new plans at all. They could be accommodated in the existing building.

Tipperary.—Excellent progress continues to be made with the Technical Education Scheme for Tipperary urban and rural districts. The committee in charge are pushing the matter forward energetically, and the Christian Brothers are seconding their exertions with characteristic enterprise. As it is they who will have charge of the new central school and will supply most of the pupils, they propose to build new schools of their own, and a residence close to the central school, so as to be able to work the latter as effectively as possible. Their present schools, in addition to being in a rather ruinous condition, are somewhat inconveniently situated. The proposal is an admirable one, and was warmly approved by the committee, who appointed a deputation to wait on Mr. Smith-Barry with a view of securing a site for the Brothers to build on.

— 10: —
ENGINEERING NEWS.—Continued from page 891.

Carlow.—**CLONEGAL WATER SUPPLY.**—A report was received from Mr. W. P. Hade, Engineer to Council, in reference to the work necessary to put Clonegal water supply in proper order. He estimated it would cost £40. It was decided to allow the matter to stand over for the local Councillors.

Down.—On the 19th inst. tenders will be received by the Down County Council for improvement of Annalong Harbour by Mr. R. MacIlwaine, secretary to the County Council.



his duty to say one or two words in reference to the monument that had just been unveiled by Captain Guinness. He wished to say, on behalf of the committee—and he was sure he expressed the feelings of all present also—how grateful they were at the result of the work of the makers of the memorial, the Messrs. Harrison, and of the designer, Mr. McDonnell. The memorial is situated at an angle on the main path, midway between the old and new O'Connell circles. It takes the form of a Celtic cross on a rocky base, standing 7 ft. 6 in. high. A reproduction of the Red Cross flag carried by the Hospital lies against the cross, the drapery coming over to the front on the

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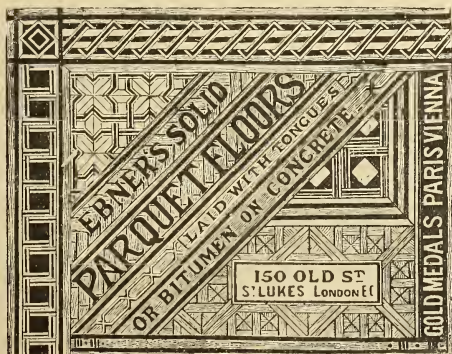
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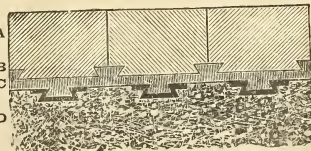
Gold Medal, Melbourne, 1888. 1st Class Diploma, Adelaide, 1887.
Gold Medal, Society of Architects, 1886 and 1887. Gold Medal, Liverpool, 1886.
Silver Medal, Highest Award, Inventions Exhibition, London, 1885.
Gold Medal, Health Exhibition, London, 1884. 1st diploma, Delft, 1885.

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CHICAGO'S BIG STATION.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—In your issue for the 12th ult., it is passinglly stated that Chicago intends having a new central railway station that will be the largest in the world. Permit me to say, to my own personal knowledge she has, according to her own account, possessed this for the last score of years past. During this self-same month in 1881 (I see by reference to my diary), I happened to be on a visit to the "Windy City," the walls of whose streets were placarded with numerous monster posters, roundly announcing that the new Central Railway Station there, a semi-underground, red brick building, was "the largest in the world." Fresh from England, I knew it was nothing of the sort; and, fortunately, I had with me a newspaper cutting, giving the actual dimensions of St. Pancras Station, London, of which the late Sir G. Gilbert Scott, R.A., was architect. So, one fine morning, I hid away to the jovial Stationmaster at the depot in question, showed him the paragraph, and proposed that we should measure his own platform, and see what it really did run out to. He, good-naturedly, assented, and, lo and behold! it worked out at less than two-thirds the length of that in our fine London terminus. "There," said I, "you see yours is *not* the largest station in the world by a long way." "That's so!" he replied, musingly, and then, closing one eye, whilst twinkling the other merrily, he added, slowly:—"No doubt, Boss; we've rather over-calculated it this time, but I guess we *must* claim to be almighty big in Chicago, or we're nowhere!"—Yours obediently,

HARRY HEMS.

Fair Park, Exeter, 25th Sept., 1901.

SPECIFICATION FOR SOLID WOOD FLOOR.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—In my specification for the above in your last issue splayed heading joints are described as splayed "beading" joints—a printer's error.

Also, in your drawing from my rough sketch, the distance apart of the joists is shown as 15 inches, whereas it ought to be 18 inches to agree with the specification. The composition should not run across the joints, as it is very sticky and disagreeable for the carpenters when they come to nail down the floor boards.

If coke-breeze concrete is used, the coke-breeze can be obtained at any gasworks. The proportions are 4 of coke-breeze to 1 of Portland cement. Turn over twice dry, then add water through a rose, and turn over twice more. The mixture must be fairly sloppy, as the breeze absorbs much water. It is advisable to first put in a layer of ordinary hard concrete to form a foundation for the breeze concrete. The floor boards can be nailed directly on to the concrete, but about a month must be allowed for the latter to dry thoroughly before laying the boards, otherwise the moisture will buckle them, and probably cause rot—I am, etc.,

J. T. REA.

King's Kitchens.—The Imperial kitchen at St. Petersburg is entirely built of black marble, floors, walls, and ceilings, covered with ornamentation in relief. All the kitchen utensils are of massive gold; they date from the reign of the great Catherine, and are valued at £10,000 sterling. Several of the saucepans are worth £40 each; and one fish kettle is worth £100. The Imperial kitchens employ 267 people. The chef receives a salary of £8,000 a year, and ten cooks of the second class receive salaries varying between £1,000 and £1,500 a year each. After the Russian Imperial kitchen the next most luxurious in Europe are those of the Spanish Court, where the curious antique batterie de cuisine is valued at £12,000. But this also pales before the magnificence of the Shah of Persia's kitchens in Teheran, where the culinary equipment is valued at over £1,000,000 sterling.

THE RENT OF LABOURERS' COTTAGES.

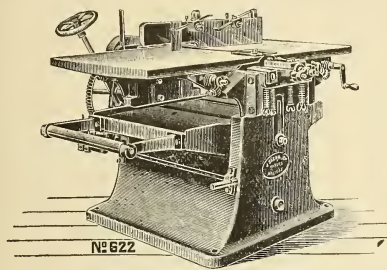
Councillor O'Farrell, in the Rathdown (Co. Dublin) District moved, pursuant to notice, to reduce the rent of the labourers' cottages in No. 2 scheme by 3d. a week, so as to enable the tenants to pay the poor rates for which they were made liable by the Local Government Act, 1898. He pointed out that the labourers in the County Meath and other districts had advantages in the way of getting fuel which the Rathdown tenants had not. The rate of wages in County Dublin was very low. They had a case before them at Dundrum recently, in which it appeared that the labourer was only earning 12s. a week from a public institution. He saw by the papers that in Birr Union the rent of the cottages was only from 1s. to 1s. 3d. a week. The motion was carried. This leaves the rent at 1s. 3d. per week. The cottages in question were built under what are known as Schemes Nos. 1 and 2, and cost for building alone about £185. In some instances, the arbitrator gave as much as £50 each for the sites. In addition, of course, there were heavy law and other preliminary expenses.

— : o : —

Cost of Carpentry.—We have many times heard of those who, either carrying out work for themselves, or desirous of checking accounts submitted to them, wished to know the cost of carpentry work. The prices of labour and materials are subject to such variation that exact statements as to cost are apt to be misleading, so that in striving after closest accuracy we might defeat our own ends. We will not, therefore, try to be too exact, but lay before the reader some simple, general kind of assistance in making approximate estimates of carpenters' work. These are not, of course, intended for the instruction of the experienced builder, but are introduced for the benefit of handy men at carpentry. The first thing to be considered is the cost of timber. In journals devoted to the timber trade, and even in daily papers, prices of timber are quoted. It is well, therefore, to avail oneself of these sources of information, and after having ascertained the current prices of the timber required, per load of 50 feet, it is not difficult to calculate its cost per foot cube, adding on such percentages of cost as may be necessitated by the sizes to which the material is cut, or other circumstances. At £2 per load it is worth 9½d. per foot, and at £3 10s. it is worth 1s. 4¾d. per foot. At £3 a load it is worth 1s. 2½d. per foot, and at £4 per load it is worth 1s. 7¾d. per foot. These would be the prices of timber at the docks, to which must be added the cost of cartage to the work, wherever it may be. The cost of cartage varies, and an approximate rule can only be given. Generally speaking, it will be fair to reckon cartage at 3s. 6d. to 4s. per load for the first mile, and 1s. per load beyond. The price of timber is affected by the sizes in which it is imported. Thus, if baulk timber from 10 inches to 13 inches per square is quoted at £4 per load, or 1s. 7¾d. per foot, the corresponding price of timber about 8 inches square will probably work out at about 1s. 1¾d. per foot, or a reduction of about 18 per cent. The corresponding price of deals will probably be 31 per cent. upon the cost of timber in baulk. It is scarcely necessary to refer to the subject of the seasoning of timber. Of course, it should always be understood that the carpenter's material should be well-seasoned. Apart from the question of cost, it is, therefore, always advisable to use deals, especially for carpentry in a small way, in preference to cutting up large-sized timber, since the boards have a better chance of becoming thoroughly dry.

OBITUARY.

Mr. Thomas Ryan died in Dublin on the 26th ult. For some time he was a builder and contractor on his own account, but afterwards became foreman to Mr. Foley, builder, of Dublin. For six years past he was foreman to Mr. P. Sheridan, contractor, at the Curragh, and in that capacity superintended a large quantity of important Government work. His death was occasioned by blood-poisoning, caused by the puncture of a brass spring in his boot. He was much liked for his many good qualities, and his loss is deeply felt.



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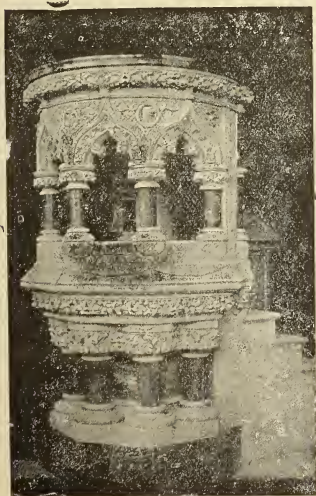
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BREVITIES.

A novel shop front has just been completed in Cheapside, London, for a firm of tobacconists. The shop-front is set back in recess from the building line, some five or six feet, so that the public may inspect samples without standing on the footpath. It consists of five bays, with angular oak columns resting on green Connemara marble. From the central bay, in which are shown cases of cigars, a view is afforded of the showroom and general offices beyond, until one's eye is arrested by a stained-glass window at the other end of the building. Inside are quaint chairs and Oriental carpets, where the visitor is invited to "divine" the cigar suited to his taste, and place his order. Many of the show-cases which surround the rooms are surmounted by fine pieces of old china. Like the rest of the woodwork, the cases are in fumed oak. With wrought-iron fittings, antique lanterns in place of lights, and an Old English fireplace, the whole design is reminiscent of mediæval times.

When Oak may be called Wainscot.—Oak boards and planks that show prominently a good silver-grain figure are spoken of as wainscot stuff. The term is not now, as was formerly the case, restricted to the oak brought from any particular country. Russian wainscot, Austrian wainscot, English wainscot, and American wainscot are the principal kinds now in the market. Russian wainscot oak is brought over in fitches, Austrian stuff principally in plank form. English wainscot also is mostly in plank, and American rift-sawed or quarter-sawed oak, as it is called, in plank and in board. To obtain the figure it is necessary that the faces of the planks and boards coincide, as near as may be, with the direction of the medullary rays; the more nearly they do this, the higher the class of wainscot produced. The ideal system of wainscot cutting is where each board in the log is made to fall exactly on the line of the medullary rays.

French Polishing.—Obtain good French polish. Prepare your pads of clean woollen rags and linen; see that the last is washed clean from any trace of starch, and dried before you use it. Pour a little linseed oil into a cup, and some French polish into another cup, roll a convenient amount of the woollen rag into a ball, saturate it with the polish, then cover it with a piece of linen drawn tightly over it, so that the face of the pad present a smooth, slightly convex surface to work with. Apply one drop of oil and one drop of polish to the surface of the pad, and commence to polish with free, continuous, and uniform circular strokes, using very light pressure, and gradually traversing the whole surface. Do not work upon more than about a square foot at a time. The same process is repeatedly continued, changing the position of the strokes, but always keeping them the same size, and being careful that every portion of the surface is worked over and over again, and receives an equal, but not excessive quantity of polish. This you can regulate partly by pressure on the rubber, and partly by pressing it between the fingers. The polishing should be continued until all over the piece of work the grain of the wood is filled; then let it dry for a few hours, when it should be rubbed lightly with the finest glasspaper, to smooth off all roughness of wood or polish. The polishing is then repeated again, and, if necessary, when dry, again smoothed, and the polishing persevered with until absolute smoothness of surface is obtained. Cloudy marks will still show from the rubber because of the oil, to remove which make a clean rubber of woollen rag, upon which put a few drops of spirits of wine, cover with a clean, soft linen rag, and work with very light strokes, first with a circular motion, then, when nearly dry, take straight strokes, going with the grain of the wood, and continue till rubber and work are both quite dry. This finishes the polishing. As, however, the wood is sure to absorb some of the polish, you should, after a few days, repeat the polishing process once at least, first lightly rubbing down the former coat with very fine, nearly worn-out glasspaper.

Water Tables.—The following formula gives the discharge of water through a notch in a thin plate:— $G = \text{gallons discharged per minute}$, $d = \text{depth of overflow in inches}$, $l = \text{length of weir in inches}$, $G = d \times \sqrt{d} \times l \times 2.67$, thus, with 4in. overflow a weir 6in. wide will discharge $4 \times 2.67 \times 2.87 = 128.16$ gallons per minute. For accurate gauging the depth should be measured by Francis's hook gauge, and not by a common rule, owing to capillary attraction, causing the water to adhere to the rule and to rise above its true height. "Practical Hydraulics," by Thomas Box, gives the tables required.

Granite from the United States.—The New York correspondent of the London *Standard* sends a cablegram to that paper announcing that arrangements are being made to send to England a cargo of several thousand tons of Maine granite. What the Maine quarries are capable of furnishing appears from the recent loosening of a monolith weighing many thousands of tons. Another slab has been quarried which is 13ft. square and a foot thick. It may be added that Maine, which is the most north-easterly of the New England States of the American Union, has a mountainous surface, and that its port of entry and chief commercial centre bears the (in this connection) doubly significant name of Portland.

The Height of a Mountain may be ascertained in any one of four ways: (1) By the aid of trigonometry; (2) by levelling; (3) by ascertaining the atmospheric pressure at the top and bottom, by means of a barometer; (4) by ascertaining the boiling point of water at the top and bottom by means of the thermometer. The first method is often more convenient than any of the others, as it does not require the ascent of the height, nor even a near approach to it; while the third is the most accurate. The pressure of the atmosphere diminishes as we ascend, but not regularly; allowance has to be made for temperature, latitude, and local circumstances. From the mean of several observations, however, it may be taken that, as a rule, the pressure diminishes one degree for every 334ft.

New York's Cathedral.—MAGNIFICENT LADY CHAPEL TO BE ADDED TO THE EAST END.—New York's magnificent Cathedral is to have a magnificent addition. Excavation has just begun in Madison-avenue, between Fifth and Fifty-first-streets, under the direction of Chas. T. Mathews, architect, for the new Lady Chapel of St. Patrick's Cathedral. The undertaking comprehends a general remodelling of the whole east end of the structure, and the addition and alterations will cost approximately 400,000 dollars. A competition was instituted in 1900 by the Eugene Kelly estate for plans covering the erection of an elaborate Lady Chapel and crypt. Architects from France, England, Canada, and all parts of the United States were invited to submit drawings. To avoid any likelihood of favouritism these plans were submitted anonymously. Professor Ware, Columbia University, was the expert for the architectural part, while Archbishop Corrigan took charge of the ecclesiastical side. Both agreed upon the design known as No. 12, which proved to be the plan submitted by C. T. Mathews, of New York city, who drew the plans for the 500,000 dollars palace about to be built in Monterey, Mexico, for the Duchess de Milmo. The general style of the new chapel will be thirteenth century French Gothic, such as may be seen in Amiens, Beauvais, Chartres, Limoges, and St. Riquier. Like the cathedrals of Picardy, the chapel will be simple and severe below, and daintily traceried and pinnacled above. The roof and belfry are to be of green bronze, touched sparingly here and there with gold. The cresting is to be treated in the same rich manner. In order to suggest the Gothic idea of restlessness and aspiration, the vertical lines will be multiplied to an unusual extent, and the horizontal lines suppressed. All the constructive features belong to the thirteenth century, but the detail weathres itself into fuller leafage and interlacings of the fourteenth century at the top. Within the chapel will depend entirely upon stained glass windows for colour and light. The interior carving will be generally in low relief of Genoese delicacy, and embodying much symbolism.

THE IRISH BUILDER

A JOURNAL DEVOTED TO

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[Estab. Jan. 1859.]

No. 1,004—Vol. XLIII

HEAD OFFICE

OCTOBER 24, 1901.

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TOPICAL TOUCHES.

The large building occupied by the Colonial Mutual Life Assurance Society, Cape Town, was destroyed by fire during Saturday week. The damage is estimated at a quarter of a million pounds.

We learn that Mr. Geo. Jennings, of Lambeth Palace-road, London, the well-known sanitary engineer, has received a notification of his appointment as Sanitary Engineer to His Majesty the King.

A deputation representing the Executive of the Cork International Exhibition waited, on Wednesday last, on the Council of the Belfast Chamber of Commerce, for the purpose of enlisting the sympathy and support of the Chamber on behalf of the enterprise.

Workmen are busily engaged in renovating and embellishing the interior of the Lyric Theatre, which will be reopened during the last week of the present month, under the name of the "Tivoli." The theatre has been acquired by a syndicate which at present owns variety theatres in Liverpool, Hull, Bristol, Birmingham, and Jarro.

The Labour Department of the Board of Trade reports that the state of employment in the skilled labour market during September shows a slight improvement as compared with August, in most of the important industries, but it is not quite so good as a year ago. During September, decreases of wages were reported, affecting large bodies of coal miners and iron and steel workers.

The first of this year's series of Hermione lectures, established at Alexandra College, in memory of the late Duchess of Leinster, was given last week in the institution by Professor C. Waldenstein, the eminent archaeologist, who is taking, as the subject of the four lectures which constitute the series, "Recent excavations in Greece and the Argive Heraeum." There was a large attendance.

The committee of the Whole House of the Dublin Corporation last week recommended, in the case of Mr. McCarthy, City Architect, an increase of £100 a year. The application of Mr. M. M. O'Reilly, Secretary of the Paving and Improvements Committee, was defeated. Mr. Walter Butler, of the City Architect's office, was recommended an increase of £25 a year, after a discussion.

In the person of Mr. James Brooks there has passed away one of the greatest architects of the Gothic revival. He was a pupil of Lewis Sturges, of London. His practice extended over the long period of half a century. He was a vice-president of the Institute of British Architects, and a member of the A.A. Mr. Brooks' work is, perhaps, hardly so well known to the young men of to-day as to those of a generation ago. His practice lay chiefly in church work, and the long list of churches which he either built or worked at would occupy half a column. His work was remarkable for the strong, vigorous character of the detail, and the bold and masterly way in which he handled the general form of his design. Mr. Brooks' design for the proposed Liverpool Cathedral in 1887 was one of the three selected designs; although it fell behind the two other designs in delicacy and grace of conception, and in planning, yet as a splendid example of the bold, skilful, original, and yet withal correct treatment of mediæval detail, it was unsurpassed.

The Irish oak of which the famous roof of Westminster Hall is constructed was grown in Dublin, in the vicinity of where now stands Christ's Hospital, or Blue Coat School. Centuries ago there stood here a famous oak forest. Some people say the Westminster Hall oak came from the county of Carlow, which, up to the present century, was noted for its fine oaks. In the middle ages Ireland was a great oak-growing country.

The designs for the great national memorial to the late Queen Victoria will be placed upon exhibition at St. James's Palace on the 1st November, and will be open to the public. The accepted design of Mr. Brock, with the figure of Queen Victoria facing towards the Mall, with attendant Statues of Maternity, Truth, and Justice. A very appropriate figure of Victory will be the chief feature. Mr. Aston Webb's design for the general treatment of the space in front of Buckingham Palace will likewise be on view, and may be compared with the unsuccessful designs.

The Royal Institute of British Architects had a very successful and festive gathering at Glasgow on the occasion of the annual dinner. The Institute was warmly welcomed by the Glasgow Institute of Architects. The Corporation of Glasgow did things right well. Visits were paid to the Exhibition, and to the many places of real genuine interest in that murky, grimy city, quite a centre of art. Altogether, the members may be said to have had a very good time. Several Dublin architects were amongst those who attended, and included Sir Thomas Drew, Mr. F. Batchelor, Mr. Kaye Parry, Mr. Albert E. Murray, and Mr. Howard Pentland.

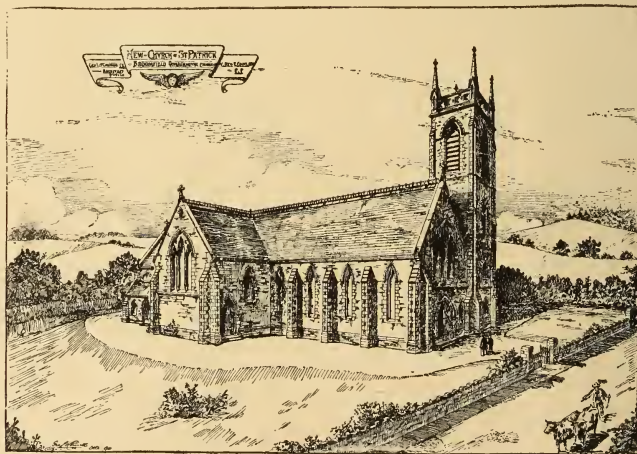
The National Free Labour Association held its ninth annual congress in London last week, Mr. J. Chandler presiding. A report was presented, from which it appeared the association had 300,000 members, and that during the past year the association had supplied employers with labour, and that over 16,000 men registered for employment as non-unionists. The president delivered an address condemning trades union methods and strikes. A resolution was passed expressing satisfaction at the House of Lords' decision in the Taff Vale case. Another resolution was adopted condemning the trades unionists' proposals for the nationalisation of land and railways, and the municipalisation of business undertakings.

The Liverpool Cathedral competition seems started on its way at last, and it is to be hoped that it may end with less than the usual display of envy and injustice and heart-burning which usually marks such efforts. Fourteen years ago an abortive competition was held—abortive so far as bricks and mortar were concerned—three designs were selected, those of Messrs. Emerson, Bodley, and Garner, and the late James Brooks, Mr. Emerson's being placed first by the Assessor. Now the project is being revived, and many people said Mr. Emerson was entitled to the commission as a matter of course, but the committee think otherwise, and have asked architects to submit portfolios of executed works for their consideration. From these will be selected the competitors. We hope to see one or two Irish architects, at least, making a bold bid. It is not often one gets the chance of designing a cathedral. Whatever may be one's views about the proper character for the detail of a great cathedral, it must be said that the committee, in limiting competitors to "Gothic"—whatever that may mean—have acted idiotically.



Broomfield, Donaghmoyne.—On Sunday the new Church of St. Patrick, Broomfield, Donaghmoyne, was solemnly dedicated by the Most Rev. Dr. Owens. The new church is an imposing building, situate on the main road from Carrickmacross to Castleblayney. There is nothing extravagant about it—no superfluous lavishing of expenditure for the sake of mere grandeur, but it is plain and substantial, yet handsome in its proportions, and in the perfection of its workmanship. The church, which is designed in the early English Gothic style, is cruciform in plan, and contains large nave, north and south transepts, chancel, and priests' and boys' sacristies. There is also provided a spacious

Belfast.—Our lively contemporary, *Nomad's Weekly*, gives an amusing account of the recent hearing of the appeals against the recent valuation. It will be remembered that for years past Belfast people have been crying out for a re-valuation of the city, and when they got it, they simply howled because the valuation was increased. Says our contemporary:—"There has, for years, been a quietly-growing superstition that it is no crime to rob a publican. Good men, with a sense of honour and conscience in all other matters, stand and watch the spectacle of highway robbery with perfect complacency. I think I understand their mental attitude, but I am certain I understand the attitude of the publican who objects to being robbed—who dislikes being kicked, and who, when kicked, turns round and kicks back. How far the gentle superstition to which I have already referred entered into the basis of the recent re-valuation of property—and especially licensed property—in this city it would be impossible to say. But most of the inspectors deserve a medal from the Band of Hope. In any case, they 'piled it on' in an outrageous fashion. Hence the inquiry; hence the kick; hence the eating of the leak; and, indirectly, hence the remedy of an impertinent injustice. Mr. J. G. Barton, C.B., the Commissioner of Valuation, sat in the Council Chamber of the City Hall on Monday to hear appeals against his own decision. Let us take Mr. Barton



Church of St. Patrick, Broomfield, Donaghmoyne.

gallery, which is reached by means of a staircase contained in the belfry tower, which is placed to the south side of the principal entrance. The walls of the edifice are built of solid limestone masonry from the local quarries, which also supplied, together with sheephouse, the chiselled limestone dressings, sills, and heads of windows and doors, cornices, corbels, etc. The church is lined internally with brickwork. The roof is formed with pitchpine panels, between moulded principals of the same material. The arches between transepts and nave are supported by beautiful polished Aberdeen granite columns, with moulded limestone bases and carved capitals. The windows are filled with cathedral glass of choice tints. The beautiful High Altar, which is composed of statuary marble and Caen stone, was made by Mr. E. Sharp, of Dublin. The beautiful pulpit of carved oak, was manufactured from the architect's designs by Messrs. Rogers and Kerley, Clanbrassill-street, Dundalk. The whole work, including furniture, pulpit, altar, etc., was executed by Mr. James Wynne, builder, Dundalk, according to the designs, and under the superintendence of the architect, Mr. George L. O'Connor, M.R.I.A.I., of Great Brunswick-street, Dublin. It is computed that the church will accommodate 1,000 persons.

first. He was sitting in the throne—or perhaps it would be better to call it the large, comfortable armchair—usually occupied by the Lord Mayor. He is an amiable, bald-headed gentleman, with the accent of a cultivated scholar, a bland demeanour, and with, now and then, a quick flush across his face, which leads me to think if he were made angry he could swear. But on Monday he was all smiles, bows, courteous gestures—in fact, a peace-maker. A subsequent hint may furnish an explanation to this. I will give him the credit to think he did not take the inquiry seriously. Then there was Mr. Thomas Talbot, who was, I believe, the officer who had charge of the re-valuation in Belfast. He is a particularly aristocratic-looking chap, with a skull fading away interestingly into the bald state, while his iron-grey moustache and whiskers set off a particularly handsome face. But he has a feeble temper, and is particularly self-conscious. When Mr. McCormick asked him the simplest of questions his cheek flushed, his eyes glared, as much as to ask: "What the devil do you mean by asking me a question at all." At one point he jumped up and approached Mr. Barton to make a protest in his ear. Barton waved his hand courteously and muttered: "It's all right. I understand. Don't bother." It was, of course, particularly hard on Talbot

to be asked why he put twenty pounds extra valuation on a man's valuation." The publicans bore the brunt of the attack, and the result of the appeal is that five-sixths of them got their valuations reduced, and were allowed their costs.

At the usual quarterly meeting of the Belfast Corporation an extra sum of £30,000 was voted for the new City Hall, in order to make certain improvements in the building. It was arranged to borrow £50,000 for the erection of the infectious diseases hospital. The question of borrowing money for the sewage purification scheme was referred to the council in committee.

The Chancellor Memorial Church, College-street South, Belfast, which has been erected in memory of the late Rev. Professor Chancellor, D.D., was opened for public worship recently. The church has been built on the site of the old edifice, in which Dr. Chancellor ministered for 30 years, and it contains a mural tablet to that divine.

Blackrock.—BLACKROCK DISPENSARY.—At the last meeting of the Poor Law Guardians of the Rathdown District, Mr. Comber submitted plans and specifications for the repairs to the Blackrock Dispensary. On the motion of Mr. Kennedy, the matter was referred to the committee already appointed to meet in Blackrock.

Ballymoney.—On Wednesday, October 2nd, a memorial pulpit of carved oak, presented by members of the Conner family, and a prayer-desk of oak corresponding in design, presented through the generosity of a number of parishioners, were dedicated by the Lord Bishop.

Clonliffe (Dublin).—On 17th Oct., His Grace the Archbishop of Dublin laid the foundation stone of a new church (St. Aidan's) for the Clonliffe district of St. George's parish. The site of the new church is at the corner of Drumcondra-road and Dargle-road. The plans were made by Mr. R. Caulfield Orpen, architect, and the work is being carried out by Mr. Robert Farquharson, Jones's-road.

Carney (Sligo).—The L. G. Board wrote in reference to the Guardians' letter of the 26th ult., forwarding amended plans in relation to the dispensary depot proposed to be provided at Carrigans for the Carney Dispensary District of Sligo Union.

Clonmel.—The new Post-office in Gladstone-street is rapidly approaching completion, so much so that the slating of the roof will begin next week. It promises to be a fine, commodious, well-equipped office, and should afford ample accommodation for the requirements of the town. Mr. Daniel Hayes, of Fermoy, is the contractor. The renovation of the facade of the County Courthouse—a rather heavy and tedious work—is progressing.

Carlow.—It is proposed to build a District School, distinct from the Workhouse, for the pauper children of the Union. The project has not yet taken shape.

Clogheen.—The Local Government Board wrote the Clogheen Guardians calling attention to several matters dealt with in the report of their medical inspector (Dr. E. Coey Bigger), and requested that they should be duly considered by the guardians. There are no convalescent wards or day rooms; operations are performed in the wards; cases are not properly classified in the different wards for treatment, and bed cards are not used in the infirmary. The infirmary ambulance was a very good modern vehicle, but the fever ambulance was a much older one. The male and female wards (sheds), which are situated at the back of the infirmary, were not suitable in their present condition as wards for the sick. The inspector stated that they were narrow, ill-ventilated, deficient in window space, and were over-crowded. In the chronic wards (sheds) and lunatic wards ventilation was deficient. No water was laid on to the infirmary, and there were no water closets or baths except movable ones, and baths and water closets would be very desirable improvements. There was no separate laundry for the infirmary or fever hospital, and the clothing of the fever hospital inmates was washed in the kitchen of the male and female infirmary. This was a matter as to which the medical officer ought at once to give suitable directions, so as to guard against the spread of infectious disease in the workhouse. A few patients suffered from

bed sores, there being one in the lunatic ward and another in the isolation ward suffering from paralysis, and the inspector stated that occasionally patients were admitted suffering from bed sores. The occurrence of bed sores in a hospital was a matter reflecting unfavourably upon the nursing of the patients. There was no disinfecting apparatus in the workhouse.

Dublin.—The London and North-Western Railway have just completed an important improvement at their North Wall Station, in the shape of a new tunnel, which directly connects the railway platforms with the quay side jetties, and passengers using their boats will, in future, instead of being landed practically upon the street, be enabled to reach their connecting trains with the greatest possible facility. The new tunnel, which has been driven under the offices of the company, connects with the existing one, and is, of course, finished in a similar manner. Two broad flights of stone stairs lead to the entrance of the tunnel, which is lined with white porcelain bricks, and lighted by electricity. The new arrangement should meet with the approval of all travellers using this route. Another decided improvement in the handsome new station is the provision of three excellently fitted waiting-rooms—one being intended for ladies, other for gentlemen, whilst the third is being prepared as a general waiting room. Both ladies' and gentlemen's rooms are handsomely carpeted and upholstered, the furniture and other fittings being of a very superior type, whilst the lavatory accommodation has been carried out upon the latest and most scientific principles. The general waiting room, which has not yet been thrown open, is comfortably furnished with good, serviceable leather-covered furniture, and is certain to be keenly appreciated when available for use.

The Board of Guardians of the South Dublin Union invite tenders for altering and repairing Ballsbridge Dispensary, in accordance with plans and specifications, which may be seen any day between 11 a.m. and 4 p.m.

Tenders are required for the restoration of 62 Pembroke-road, and plans and specifications can be seen at the office of Mr. Robert J. Stirling, Architect, 24 Clare-street.

Dalkey.—ERECTION OF HOUSES.—A report was submitted with reference to the erection of a number of houses in the township by Mr. William Tristran, of Kingstown. The report stated that Mr. Tristran had encroached on the foot-path, and that he should not be allowed to continue the erection of the same range of houses. On a division, the question of allowing Mr. Tristran to continue the present building as it was, and to set back the other houses to be erected, was carried, Mr. Quinn dissenting.

Enniscorthy.—The building of the new post office in Enniscorthy has been stopped. It appears that part of the public thoroughfare has been encroached upon for the building of the edifice, and, consequently, had to be discontinued. Two years ago something, we forget exactly what, cropped up to prevent a new post office from being built, and it is to be hoped that it will not take two years more to arrange the present difficulty. The post office is too badly wanted for the people to be merely amused at the constant muddling of the authorities who control that institution.

Ferns.—A bazaar was held at Ferns, Co. Wexford, with the view of raising funds for the restoration of the ancient cathedral. The edifice will still be used as a parish church, so that no additional annual expenditure will be required for its maintenance. The first part of the scheme includes the erection of a chancel arch, the re-pewing of the entire church, opening up the roof, and the erection of stalls for the choir and church dignitaries. The work is to be commenced at once. The original view of the promoters was to raise £7,000, but this proved far beyond what was practicable, and the sum now sought to be obtained for the first section of the work, the internal renovation, is £1,100, towards which Earl Fitzwilliam has given £300.

Gilford (Co. Down).—On the 7th inst., the Lord Bishop held a Dedication Service in this church on the completion of the work, which is intended to serve as a memorial

of the late Archdeacon Harding, who for over thirty years was vicar of this parish. A handsome stone pulpit has been erected to her husband's memory by Mrs. Harding, in which she is joined with her son, Mr. Freeman Crofts. The memorial erected by the parishioners has taken the form of re-tiling the chancel with encaustic tiles, and substituting for the old stone steps at the entrance of the chancel and the rails beautiful red steps of Middleton marble. A brass Communion rail, with brass standards, has also been added.

Galway.—At a recent meeting of the County Council Mr. Burke proposed:—"That we, the County Galway Technical Instruction Committee, hereby express our surprise at the letter of the Department refusing to sanction the grant of £2,000 voted more than two years ago by the County Council for building and equipping a technical school at Gort, and that we are of opinion that such a course is very detrimental to the advancement of technical instruction, not alone in County Galway, but all over Ireland."

Glin (Co. Limerick). At the fortnightly meeting of the Glin Rural District Council, the Clerk read a letter from the Local Government Board, in which it was stated that as a result of the sworn inquiry held at Glin by Mr. Wilson Lynch, L.G.I., on 18th June, into the improvement scheme under the Labourers' Acts, promoted by the district council, which proposed the erection of 49 cottages with acre plots attached, 40 additional plots, and 2 one-acre allotments for labourers in the town of Glin, the Inspector recommends the erection of ten cottages with acre plots, which are to replace houses condemned as unfit for human habitation. These houses were not opposed at the local inquiry. The borrowing powers of the council would not permit of the erection of any more cottages. The engineer was ordered to go on with the scheme.

Glasthule.—On Sunday last, the new bell, which is about to be placed on the tower of St. Joseph's Church, Glasthule, was blessed by the Archbishop of Dublin. The new bell was cast at the Fountain Head Bell Foundry, James's-street, Dublin, and weighs over 15 cwt. It bears a suitable inscription, setting forth the circumstances under which it was made, under the invocation of the Archangel Gabriel, and has a beautiful, soft, and musical tone. The cost of the bell was about £120, and there is a sum of about £40 yet due.

Londonderry. The Foster Trustees invite tenders from competent persons for the extension and completion of Marlborough-street and Beechwood-avenue, in accordance with plans and specification prepared by Mr. M. A. Robinson, architect.—The Committee of Management of the Londonderry Co-operative Society invite tenders for alterations to their central premises. Plans and specifications can be inspected at the Society's Office, 59 Strand-road.

Lake Church (Sligo).—On Sunday last this new church was dedicated.

Newport (Cashel).—CHURCH OF ST. JOHN'S.—The Harvest Festival in this parish was specially marked this year by the dedication of a new pulpit to the glory of God, and in memory of the late Mr. Hastings Twiss, of Birdhill House. The pulpit, which is of oak, and has been presented by Mrs. Hastings Twiss, is handsomely carved and made by Messrs. Sharp and Emery from a special design to correspond with the architecture of the church.

Oldcastle.—THE DISPENSARY.—The Local Government Board wrote requesting the Guardians to consider the question of acquiring more suitable premises than the present for the Oldcastle Dispensary Depot.

Rathdown.—The Rathdown No. 1 Rural District Council want tenders for about 1,000 yards of plain iron fencing in connection with No. 3 improvement scheme. Mr. R. M. Butler, 12 Dawson-street, Dublin, is the architect.

FURNISHING THE CHAPEL AND NUNS' RESIDENCE.—Mr. Kennedy said the new chapel and nuns' residence would shortly be completed, and it would be necessary to move in the matter of providing furniture, etc. He proposed that a committee be formed to confer with the Rev. Canon Quin on the subject.—The motion was passed unanimously.

St. Kieran's (Birr).—On Sunday, 13th Oct., the new Roman Catholic Church of St. Kieran's was solemnly consecrated in the presence of numerous prelates, dignitaries, and clergy, and several thousands of spectators. The church, which is a fine structure, is erected from the designs of Mr. Byrne, architect, and stands on a picturesque site on the famous Bell Hill, where St. Kieran first began his great Apostolic efforts, 1,500 years ago. Much credit is due to the parish priest, Rev. Thomas Phelan, for having, amidst almost insuperable difficulties, carried out this most needed work within two years.

Sligo.—THE CATHOLIC CHAPEL.—The Chairman said the committee had to consider what would be done about the erection of a Catholic Chapel, for which a loan of £4,000 odd had been obtained. Mr. Denis M'Lynn was declared contractor some time ago.—Mr. Higgins: And he is ready and anxious to go on with the work.—Mr. Jackson: He should sign an agreement.—Clerk: The agreement is already made out. The only thing is to change the date for finishing the work.—Mr. M'Lynn was called before the committee, and he said he was prepared to commence the work at once at his own risk, till the agreement would be perfected. He expected he would have the roof on it on the 1st of October, 1902.—It was decided to give him till the 31st of November, 1902, to complete his contract.

THE NEW PROTESTANT CHAPEL.—Mr. John Clarence, Ballisodare, tendered to erect a Protestant Chapel, in accordance with Mr. Dean's plans and specifications, for the sum of £798. Mr. Charles Conway's price was £1,012, and Mr. Denis M'Lynn's, £1,100.—After some discussion in regard to the loan, it was unanimously decided to give the contract to Mr. Clarence, as his was the lowest tender, he to have the work finished on the 1st of October, 1902. Mr. Thomas M. Deane, A.R.H.A., is the architect.

On Saturday the Board of Guardians considered tenders for a new stairway from Infirm Women's Ward to yard, to be fitted and put together before interfering with the existing stairway, which is to be removed, and floors made good. The work to be done in accordance with plans and specifications, and be approved of by Mr. P. J. Kilgallon, C.E., Sligo.

Tallaght (Co. Dublin).—The home of the Dominicans at Tallaght, beside which, in the beautiful memorial church, sleeps Father Tom Burke (the famous Dominican preacher), is being enlarged by the erection of a handsome Novitiate in a style worthy of its surroundings. Tallaght has pious and saintly memories dating back to the heroic age of Irish Christianity, and the sons of St. Dominic are worthily reviving them.

Waterford.—A GENEROUS OFFER.—Mr. Carnegie, the great millionaire, who is anxious to dispose of his immense fortune before he dies, and is giving money lavishly for various philanthropic objects, has offered to give £5,000 for the building of a new free library in Waterford City, under certain conditions. The free library in the city has, we believe, been very largely availed of.

A meeting of the Public Free Library committee was held last week, and was largely attended. Mr. Carnegie's munificent offer of £5,000 towards the erection of a new library buildings, on the condition that the present revenue of something about £195 a year was increased by £45, so as to ensure the future maintenance of the library, was discussed at length. The present revenue is the maximum which can be derived from the city rates, and the increased amount necessary under Mr. Carnegie's conditional offer, must be raised by some other method. It is stated that a sum of £1,000 would be required to secure that amount annually. Of this amount a prominent citizen has already expressed his intention of subscribing £250, leaving £750 to be made up by the citizens. The committee decided to call a preliminary public meeting of representative citizens, to consider the means to be adopted in the circumstances for securing the necessary additional sum.

Waterford.—There are rapidly nearing completion, at John's Hill, two very fine detached dwellings, which are the property of Mr. J. Briscoe, jun., builder and contractor, of this city. They are in a line with the residential houses built higher up by Alderman George Nolan, and will greatly add to the appearance of this rapidly-improving thoroughfare.

Youghal.—Tenders are invited for alterations and improvements to South Abbey National Schools, Youghal, for the Select Vestry of St. Mary's Parish, Co. Cork, Rev. John R. H. Becher, M.A., Rector, in forming Lecture Hall, Reading Room, Recreation Room, and school. The architects are Messrs. Robert Walker and Son, of Cork.



Belfast.—On the 28th inst., the Great Northern Railway Company want tenders for works in connection with the roof over the Great Victoria-street Station, Belfast. Mr. T. Morrison, Amiens-street Terminus, Dublin, is secretary to the Company.

Belfast.—COST OVER A MILLION.—The first instalment of the big scheme for supplying Belfast with water from the Mourne Mountains has now been successfully inaugurated. The entire works are costing one and a half millions sterling, and when completed, thirty-five million gallons of water can be brought into Belfast daily.

Drogheda.—THE SANITARY IMPROVEMENT OF THE TOWN The following was read at a meeting of the Corporation:—"Sir,—With reference to previous correspondence, I am directed by the Local Government Board for Ireland to inquire what steps have been taken to carry out the recommendations contained in the report of Dr. Flinn, Medical Inspector, on the sanitary circumstance and administration of the district, which was communicated to the Council in April last. By order of the Board."

Enniscorthy.—A correspondent informs the *Waterford News* that, pending the erection of electric plant, the Board of Management of the County Wexford Asylum have decided that oil shall replace the old coal-gas as an illuminant. And this although Mr. Tynne, the manager of the local gas works, had volunteered to run two pipes instead of one to the asylum premises, so as to give a better supply of gas without any increase in the contract price.

Kilkenny.—On the 24th inst. the Kilkenny Rural District Council will consider tenders for building a culvert and dam. Mr. R. C. Comerford is the Clerk to the Council.

Kilkenny.—WAR DEPARTMENT CONTRACT.—Tenders are required for the supply of C. I. pipes, connections, sluice valves, hydrants, etc., etc., to the value of about £450, at the Barracks, Kilkenny. Parties desiring to tender for the supply of these stores and materials must apply at the Royal Engineer Office, Fermoy, Ireland, on or before Wednesday, the 23rd day of October, 1901, between the hours of 10 a.m. and 4 p.m., where they can be supplied with the necessary information. Major W. F. McCarty, R.E., is the C.R.E. for the Fermoy district in which Kilkenny is situated.

Manorhamilton.—The Rural District Council, acting as the Sanitary Authority, will receive from duly qualified engineers tenders for the preparation of plans, specifications, and estimates for providing the villages of Kiltyclogher,

Drumkeeran, and Dromahair with an ample supply of pure water. The District Council will also be prepared to receive tenders for plans, maps, specifications, and estimates for the providing of the town of Manorhamilton and the village of Dromahair with a complete system of sewerage. Tenders, addressed to the presiding Chairman of the District Council, will be received not later than noon on Thursday, 14th November, 1901. Mr. Peter Keany is the Clerk of Council.

Ennagh.—ACETYLENE GAS.—The Ennagh Urban Council have decided, by a majority, to accept the offer of the Sunlight Gas Company to light the Town Hall and Cudville for £137, and the tender of the local Gas Company, though offering to light Cudville free, was rejected. This is the third town in Tipperary county that is changing the old system of lighting for the newer and cheaper ones.

Passage.—THE PASSAGE WATER SUPPLY.—There is no doubt but that a supplemental water supply is absolutely needed for domestic purposes in the village of Passage. The present supply, in connection with which a sum close upon £300 has been expended, has completely failed, and during the summer that has just passed, the inhabitants were in a bad way for water for domestic use. The matter has frequently come before the No. 1 District Council, and once more last Saturday it appeared upon the *tapis* at the monthly meeting of that body. The Council have no objection to the granting of a supplemental scheme, but the majority seem to be opposed to the cost being spread over the entire district. However, the committee hold that the supplemental scheme must be regarded as a new work, having no connection with the original scheme, and, consequently, the charge should be a district charge. A long discussion hinged on this point last Saturday, when a deputation, of which Mr. Meade was spokesman, appeared before the Council. It was again decided to refer the matter back to the committee for report.

Rathdown.—LIGHTING OF STILLORGAN.—The Local Government Board wrote to the Rural District Council enclosing copy of a letter which they had received from Messrs. Barrington, solicitors, with reference to the lighting of Stillorgan. They complained that Mr. Pilkington, whose property was taxed for the scheme, had received no notice of it, and stated that he would have strongly objected to it. He was anxious to introduce the gas into his own premises. It was decided to inform the Local Government Board that the statutory notice had been given.

Sligo.—The Board of Guardians of the above Union will on the 2nd of November, 1901, consider tenders for the carrying out of sanitary and other improvements in the Workhouse in accordance with the plans and specification prepared by the Board's architect, Mr. P. J. Kilgallon, which can be seen at the office of the Sligo Union. The work to be completed within two months from date of acceptance of tender.

Sligo.—The Finisklin Sewerage is now a subject of debate at the Sligo Council. Works to the extent of £210 will be undertaken.

Tuam.—Notice is hereby given that the Rural District Council have adjourned the consideration of the question of inviting engineers to come and examine the township, and submit plans, &c., for the drainage of the town of Tuam.

Tipperary.—ELECTRIC LIGHT.—The plant and street poles for the new electric light installation for the town have been set up, and things are so far advanced that the old borough should be lit with this beautiful light in about a month's time.

Painting a Big Bridge.—The heavy task of reoating with paint the massive ironwork of the Tower Bridge has been some time in progress. This is the first time since its opening, on June 30th, 1894, that the bridge has been placed in the hands of the painter. The work is one of considerable magnitude, and the contract runs into nearly £5,000. The contractor, Mr. A. H. Hinns, does not expect to finish the undertaking before Christmas.

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NOTICE.

The subscription to the "Irish Builder" is now reduced to 4/- per annum (postage paid). Subscriptions are payable in advance, and we shall feel obliged if subscribers will kindly forward renewals to 11 Lower Sackville Street, Dublin. Subscribers can also assist by mentioning the paper, especially when corresponding with advertisers, and bring it under the notice of friends likely to subscribe.

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Statutory Registration.

IN the course of his inaugural address to the London Architectural Association, the other night, the President, Mr. W. Howard Seth-Smith, F.R.I.B.A., referred to registration, and said:—"The absolute necessity of some protection of the title of architect and its confinement to duly trained men is being more widely felt every year. In addition to the striking unanimity of Continental professional opinion which I mentioned a twelvemonth ago, we now have the weighty and closely reasoned pronouncement of the President of the Institute in favour of something of the kind. A law has just been passed in California with this purpose, and I am convinced that the majority of provincial professional opinions in this kingdom is in favour of it. The Institute's policy, moreover, since the establishment of the examinations, is incomprehensible and illogical, excepting as based on this principle. After all, the proposal is only that the State should give us a justly acquired right to the expensively acquired skill and knowledge which it demands in the same spirit as it did to the mediæval guilds, but in the manner dictated by the political and social conditions of to-day." This is one of the strongest and most outspoken condemnations of the policy of the British Institute yet made by an architect of the standing of the President of the Association; that he is absolutely correct in his diagnosis of the views of provincial (and Irish) architects is abundantly clear. The British Institute has now, for years, blocked all progress in the direction of legitimate protection. Is it too much to hope that this dog-in-manger policy will, in the near future, be abandoned.

The quarterly return of the Registrar is now to hand, and affords some interesting particulars of the state of the country. The Census returns are dealt with, and scarcely suggest matter for congratulation. In this current report some modifications have been introduced, consequent on the information obtained at the recent Census. The populations for all the urban districts have been extracted from

the original returns or from the summary of enumerators' abstracts already published, and thus birth and death rates have been calculated for the principal Irish towns, which may be considered correct for all practical purposes. The population of Ireland on the 31st March, 1901, was, according to the preliminary abstract, 4,456,546, showing a decrease of 248,204 persons, or 5.3 per cent., as compared with the population in 1891, which means a steadily dwindling population, and while the people are regularly leaving the land, the provincial towns, with scarcely an exception, also show declining populations. The number of emigrants who left Ireland during the quarter ended 30th June last, was 17,843 (8,060 males and 9,783 females), being 3,667 less than in the corresponding quarter of the year 1900, and 3,686 under the average number for the second quarter of the ten years 1891-1900. The average death-rate for the whole country was 19.3 per thousand of the population, while in Leinster it reaches 21.4; in the County of Dublin, 23.9. The death-rate for the last quarter in the urban districts, which contain about one-fourth of the total population of the country, was 22.3, according to the Census of 1901; in the remainder of the country the death-rate was 17.9.

A Clare Case.

The Freeman's Journal says:—"The English *Architect* has discovered that "the Irish Local Government Board must be hypercritical, and, therefore, difficult to please." We congratulate the *Architect* on its perception. The immediate case in point is the case of Ennis, Co. Clare, where four times plans for artisans' cottages have been sent to the Board for approval, and four times they have been rejected. The plans were prepared by the surveyor to the Urban Council, and on the last occasion which they were submitted the estimated cost of £148 per cottage was declared by the superior wisdom of the Local Government Board to be too high, and the surveyor was at the same time recommended to inspect some plans recently adopted for Limerick, and declared to be satisfactory. Ennis, however, with its narrow streets, requires, in the opinion of the surveyor, a somewhat different treatment from Limerick, and that gentleman is not unnaturally a little indignant. Meanwhile, the artisans of Ennis may wait for their cottages.

ARCHITECTURAL ASSOCIATION OF IRELAND.

The annual general meeting of this Association was held in the rooms of the Royal Institute of Architects of Ireland, 20 Lincoln-place, Dublin, on Tuesday, the 8th inst. The President, Mr. C. J. MacCarthy, occupied the chair. After the usual business was concluded, the hon. secretary read the report of the committee for the Session 1900-1, and the hon. treasurer, Mr. J. H. Webb, his statement of accounts. The prizes won during the last session were then distributed by the President, the prize-winners being as follows:—A.A.I. Travelling Studentship, Mr. J. A. Rockett; Institute Prize, Mr. Charles B. Powell; Beckett Prize, Mr. L. O'Callaghan; Class of Design, 1st, Mr. W. Conolly; 2nd (tie), Messrs. J. K. Vinycomb and H. J. Leask; Class of Building Construction, 1st, Mr. H. Lundy; 2nd, Mr. W. Conolly; Technical Demonstrations, 1st, Mr. L. O'Callaghan; 2nd, Mr. H. J. O'Rourke; 3rd, Mr. F. Morley. The President delivered his inaugural address, which we publish *in extenso*.

Mr. Joseph Geoghegan moved, and Mr. R. M. Butler seconded, a vote of thanks to Mr. MacCarthy for his very able and interesting address, which was carried with acclamation.

An exhibition of the students' work of the past session opened in the R.I.A.I. Rooms, Lincoln-place, on Monday last, and will remain open every day during the pre-ent week. In our next issue we shall review the exhibits.

ELECTRIC DEVELOPMENT.

WATER v. STEAM.

(SPECIAL ARTICLE.)

By H. T. HARRIS, C.E., DUBLIN.

Water-power in Ireland.

Water gives power, and consequently light cheaply, and water itself is cheap, so let us see how to utilise that which can be obtained so easily in Ireland. Water weighs at 60 degs. F. 62.367lbs. per cubic foot, and thus it is hard work for us to carry it, but let us think what this weight of water can do for us? Its power is being wasted in our country, and we are allowing this to go on year after year, and people seem quite content to pay for coal and steam power and gas light, and oil light, the materials for which have to be carried hundreds of miles for use. Often the question is asked. Why has Ireland all its old mills shut down, and are they useless? You will receive the reply, that the mills are too far from rail or town, and the cost of carriage, therefore, eats up the profit. Now, supposing the power derived from the water could be brought to the town or village over two copper wires, and be made use of to supply energy for works through the town in the day time, and for light at night. It would be a most valuable property to own, in place of a derelict ruin, and instead of allowing the good money to go to pit-owners and carriers; in place of this let Ireland save a great portion of this waste. What are all the valuable lakes doing; why not turn them into value?

The Use of the Turbine.

Now "water falls" from 4ft. to any height can be turned into power by means of the turbine, which has an efficiency of 75 per cent., as against the 45 to 60 per cent. given by old water wheels, either undershot, overshot, or breast in our mills; there are many "water falls" in Ireland where the maximum fall of the water has not been taken advantage of, because of the cost of building a large diameter water wheel. There are also many mills where the fall of water might be increased by altering the course of the river. There is one important river which, by being diverted, could be given a fall of 165ft., and made give off over 8,000 horse power, which could be utilised in our cities. People will ask how are you going to convey this power? The reply is obvious and easy, if we could get an Act to enable electric wires to be carried on poles across the country, as the Swiss are allowed to do; I may mention that the use of electricity in Switzerland has revolutionised the manufacturing trades in that country, and there even the poor peasant in his wooden hut can afford the electric light. What does this mean to a poor man, who lives in a small room? Pure air, better health and vigour to carry out his daily duties. In that country a 3ft. fall of water is not allowed to go to waste if it is within measurable distance of a village.

Lighting of Irish Villages.

Our Irish villages might be lighted in the same way, and towns like Clonmel, Newtownbarry, Fermoy, Drogheda, Mitchelstown, Limerick, Coleraine, Bandon, Carrick-on-Suir, and dozens of other towns could be treated in the same way. To give some idea of how power can be conveyed from the water for miles, I might refer to the Electricity Works at the great and mighty Falls of Niagara, about which the whole world is ringing at the present moment. The weight of water tumbling over these Falls represents 100,000,000 tons per hour, and the fall of this volume from the top to the bottom (165ft.) would equal about 6,750,000 horse power; an amount which, if all the coal brought to the surface per year, in the world, were used for the purpose, would not be sufficient to generate this power from steam.

What Has been Done in Other Countries.

The energy taken off the Niagara Falls is equal to about 20,000 horse power, and it is distributed for over eighty miles around: in all classes of power, lighting, and chemical industries, and, in fact, new towns have sprung up, and grown and prospered, and it would be very difficult to calculate what will be the final growth of this magnificent installation. I should not be at all surprised to find some day Niagara's power in New York. On the Continent we find water power

stations at Tivoli, supplying the ancient City of Rome. Then there are the fine electric water power stations at Geneva, Zurich, Tellurido, etc. Just to show what importance the modern engineer gives to water power, I think it may be interesting to note, that the great dam now being constructed across the Nile, pockets back the water for irrigation purposes, but will also be made use of to generate electricity for transmission of power and light, so that the water will not be allowed to run over the dam (some 60ft. high) without doing its duty for mankind. The works just referred to are of a great magnitude, and are costing an enormous amount of capital, but capital once spent on a dam or equipment of water power, must be taken to represent the cost of an everlasting flow of energy: for the water represents similarity to coal—energy.

The Storage of Power.

Power can be stored by stocking it up, either in the form of water held back in a basin or lough, by means of a dam, or, if it cannot be accomplished in this way, it can be stored in the form of electricity. Of course, the advantage gained by such storage is, that if you require a large power for a few hours, then a small supply accumulated for 18 hours in the day will give a far greater power for the six hours per day during which it is to be utilised. To give an idea of my meaning I will take a town that requires 10,000 small electric lamps burning every evening during the same time. On the average per annum a lamp burns about 4 hours per night. Now, let us assume we have a river which will give an average throughout the year of 150 horse power for 24 hours per day, and if we store this amount say for 20 hours per day, we shall get 20 x 150—equal to 3,000 horse power, and to this must be added the four hours when the light is being supplied; for the river will be still supplying the 150 horse power, so we get 150 for four hours; this equals 600, and 3,000 with this equals 3,600 horse power to supply the 10,000 electric lamps that we require for four hours. Of course, in the case for power for factories; or, driving trams or railways, you would have longer hours of load, as a factor, a tram or railway is generally operated for any time necessary, and an electric tram generally runs for 15 hours a day.

Gas Supply in Irish Towns.

It would be interesting to know how many towns in Ireland have no gas works for lighting the streets, and in those that have a gas supply, why the cost of generating it is so great, that but few avail themselves of the luxury of light, and, secondly, the process of manufacturing the gas is so crude, that the impurities given off are most dangerous to health, and for this what is the cost? The charges per 1,000 cubic feet of gas vary, from 2s. 6d. in Belfast, to 8s. per 1,000 feet in some of the rural towns and villages. Its expense once again becomes a question of coal carriage.

The Rivers of Ireland.

In dealing with water power in Ireland we must remember the nature of its rivers. The rivers of Ireland are composed of four classes—1st., the river that drains the flat lands; 2nd., the river that drains the lough; 3rd., the mountain rapid river, and the 4th class of river is the subterranean, and, therefore, for our purpose useless. The first class of river usually retains a constant flow of water with fairly even velocity. These rivers are generally supplied with a catchment area, in which bog traces of country are contained, and the bogs take up the heavy rain falls, and they keep giving their water off to the river. These rivers are generally of considerable size, but the falls that are found on them, as a rule, are small, varying from 1ft. to about 8ft. as a maximum. These rivers are generally free from sand, trees, and leaves coming down, and thus very suitable for fixing turbines in. The second class of rivers are those that drain the lakes; these rivers are generally more rapid in flow, and the falls, as a rule, have cut their courses through rocky country, and run in a series of small falls from 6ft. to 2ft., and a good deal of sand is generally found in them. This class of river may often be found suitable to dam up, either at the lake end, or en route to its mouth. Of course, the supply from this class of river is generally very good for a constant supply of water. The third class of rivers is generally very rapid, and very variable, because our mountains are principally rocky, and

very little soil covers the rocks, and the result is that often after heavy rain there is not sufficient spongy material to hold the water, and thus immediately the river is "in flood." These rivers are generally very full of sand, leaves, and broken trees. They often have very fine falls that run up to roof, or more, and are well suited for power, but the supply generally fails in the dry season. The 4th class of river is the subterranean, and they are seldom found, but do exist in Ireland. The origin of them is usually found in the strata of soft soil lying between one lake and another. The source lake being at a higher altitude than the lower, the weight of water in the top lake causes the weak strata of material to give way. Some of these rivers are also supposed to spring direct from the earth's bowels, but I believe that the first explanation of their origin is the correct one. The following table gives the catchment area of the principal rivers in Ireland:—

Rivers.	Length.	Area of Catchment in Sq. Miles.
Shannon	160½	6,600
Liffey	82	528
Lagan	53½	218
Blackwater	194	1,284
Barrow	119½	1,184
Suir	114	1,394
Lee	55½	485

The canals of Ireland form one of the most complete systems of canalization in Great Britain and Ireland, but yet many of them are nearly derelict. The water supply would be extremely good if it was developed, and their locks are clear proof of the different falls that can be got, and in these the waste water might be turned to account for the electric propelling of barges, etc. If this could not be used all the year round, a good power could be obtained for eight months out of the twelve. If we turn to the canal, which gets its water from Lough Neagh, and which runs into the river at Newry, there it can be easily seen, because the canal has seven locks, and each lock has a fall of about 8ft., and these I estimate would give about 6,000 horse power if properly exploited. The next large scheme is the Shannon Scheme, to harness the falls at Killaloe, and the engineers estimate that they will get some 8,000 horse power from this source.

To be continued.

OUR ILLUSTRATIONS.

BROOMFIELD NEW CHURCH.

We publish a view of the new church at Broomfield, of which we give a full description in our "Building News" column. Mr. George L. O'Connor, of Dublin, is the architect.

We are indebted to the courtesy of our contemporary, the *Dundalk Democrat*, for permission to publish this illustration.

ADARE MANOR, COUNTY LIMERICK.

Adare Manor is the seat of the Earl of Dunraven, K.P., and was designed by the late E. W. Godwin, architect, and is an example of the best domestic work of the Revival.

In acknowledging the courtesy of our contemporary the *Stone Trades Journal*, in permitting us to publish the illustration of the Belfast Town Hall, given in our last issue, through an oversight we inadvertently described our contemporary as *Stone*, instead of *Stone Trades Journal*. We much regret this mistake, and take this opportunity of correcting it.

The Angel Hotel, in North London, the yard of which figured in Hogarth's "Stage Coach," is about to be pulled down and rebuilt. It has been established as an inn for two and a half centuries.



Mr. C. MacCARTHY,

Who recently delivered a striking address before the Architectural Association.

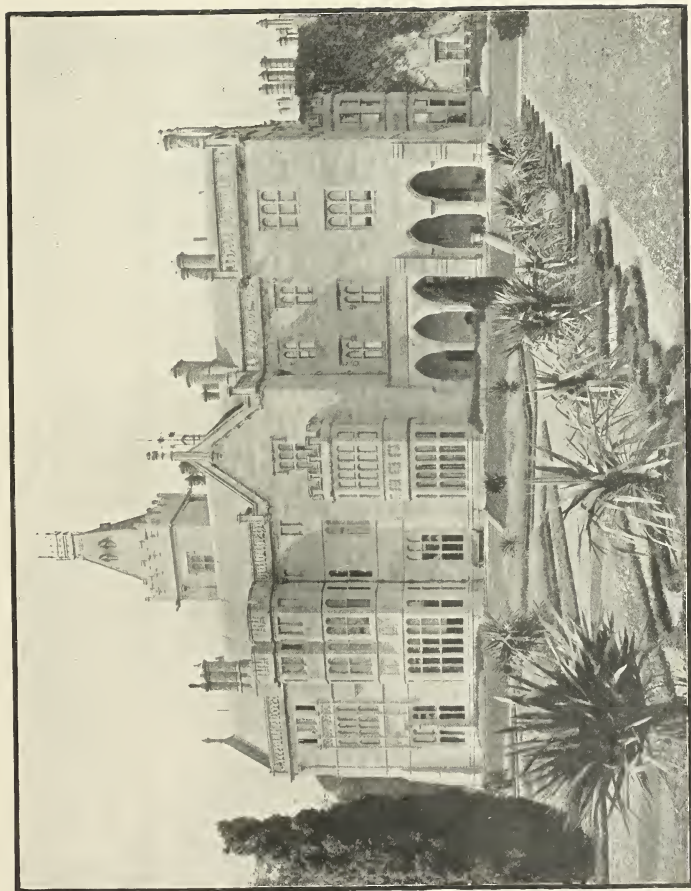
THE ARCHITECTURAL ASSOCIATION OF IRELAND.

The following address was given by the President, Mr. Chas. J. MacCarthy, city architect, at the inaugural meeting of the session:—

My first duty this evening is to thank you, in all sincerity, for the great honour you have done me in making me the President of your Association for the coming year. It is the highest office in your gift, and in conferring it on me you have paid me the highest compliment possible. I should be wanting in gratitude, therefore, if I did not gladly seize this opportunity of thanking you for the very great honour you have conferred upon me, and of telling you how pleased and how proud I am to be your President.

The Success of the Association.

I am glad, too, to be able to congratulate you on the success of your Association, for although only a few years in existence, it has already gone a long way towards accomplishing the objects with which it was started. I am almost ashamed to admit that it is only quite recently I have become acquainted with what I may call the inner working of the Association, but in that short period I have seen what a genuine interest your members take in everything that tends to forward its aims. It is proverbial that comparisons are odious, yet I am not afraid to say that I would much rather be the President of this Association than President of that more venerable, and, in many respects, more important body, the Institute of Architects. In saying this you must not imagine that I seek to flatter you; still less would I have it supposed that I was willing to disparage the Institute of which I have been myself so many years a member. The reason of my preference is very simple. Your Association represents the younger men of our profession, and it is the young men—and the young men only—who appeal to the imagination. By the time a man is forty, he has either hit the mark or failed. Of course, I do not deny that after forty he may add fresh laurels to the wreath he won in earlier years, but after forty we know his qualities and his limitations; he no longer appeals to our imagination, for we can no longer speculate about him. The future holds nothing for him, the future belongs to the young men—the future is yours.

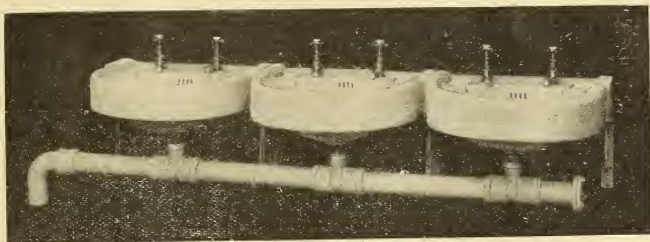


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The Possibility of a National School of Architecture.

It is to you, the younger men, therefore, that the country must look for, shall I say the revival or the inception of a school of really national architecture—if, indeed, such a school be possible in Ireland. And this, gentlemen, brings me directly to the subject on which I am to speak to you briefly this evening. Now, let me say at the outset that I have no intention of dogmatising on this subject. I am here to ask the question:—"Is a School of National Architecture possible in Ireland?" I am here to ask that question and to suggest certain points of view from which the subject may be looked at, but it is you who will have to answer it, and answer it not in words, but in deeds. This is a heavy responsibility, but you cannot escape it, even if you would. Your works will be your answer, and, once given, that answer cannot be withdrawn or re-considered.

The Responsibility of the Rising Generation.

And now, gentlemen, if any of you are feeling overwhelmed by the weight of this responsibility, it may, perhaps, be some encouragement to know that I, for one, am hopeful that this question can, and will, be answered in the affirmative. It is quite true, of course, that the present is an age most unfavourable to artistic development. It is an age in which the majority are largely given over to material things, to greed and self-seeking, while the best and highest intellects seem to be attracted by literature or by scientific research of one kind or another, rather than by such arts as painting, sculpture, or architecture.

Poetry and Music.

But while this is true, it should encourage us to remember that, in spite of this materialism, the century which has closed was not, even in the most material of countries, wholly unfavourable to other arts, such as poetry and music, for, as Mr. Lionel Johnson, a most competent critic, has said: "The poets of the nineteenth century did well. That I am convinced, will be the verdict of centuries to come; and while nearly every nation shone in respect of poetry, France and England excelled the rest." Music, too, has flourished in the apparently uncongenial atmosphere of the last century, although it was in Germany alone that it found its highest expression. And if arts such as poetry and music have been able to withstand the blighting influence of a Philistine environment, why should we despair of architecture?

Architecture and Painting.

Again, if we compare architecture with painting and sculpture, we must remember that while the latter arts partake, to some extent, of the character of luxuries, architecture of some kind is a practical necessity. So long as buildings are required, either for public or private purposes, architecture is not only possible, but necessary, and it only rests with us architects to mould its character as we will. But, granted that a School of Architecture is possible and necessary, it may still be asked: "Will not your attempt to make it national end in making it narrow and provincial? Is not all great art cosmopolitan?" To the first of these questions the answer is an unqualified "No;" to the second, a very qualified "Yes."

Nationality or Cosmopolitanism in Art.

Nationality and provincialism are as far asunder as the poles, and only a very loose habit of thought could ever confuse them. As to cosmopolitanism in art, here, too, a confusion of thought exists. All great art must—in its origin, in its growth, in its making—be instinct with the spirit of the country which has produced it, and, therefore, in the true meaning of the word, essentially national. But there is a sense in which great art is cosmopolitan, for as soon as any nation has produced even one solitary work of really great art, that work belongs henceforth to mankind. The sculpture of Greece is to-day the inheritance and the birthright of every cultivated, I may say civilized, man. But none the less is it essentially Greek; Greek in its idea, in its spirit, in its character. And so it is with all great art, for, to quote again the words of Mr. Beresford Pite, already quoted by our late President in his admirable valedictory address, "Architectural art is but the expression of those influences which go to form the character of a nation."

Ecclesiastical Art in Ireland.

Now, if I were asked to what branch of architecture I looked as holding forth the greatest promise of becoming the foundation of an Irish School, I would unhesitatingly say, to ecclesiastical architecture. It is to the Catholic Church, the Church of the majority of Ireland, rather than to the State, the Municipality, or to private enterprise, that we must look for the material out of which a School of National Architecture is to be created. Perhaps few of us realise what vast sums of money have been spent on the building of Catholic churches within the last 50 years. It would be difficult to estimate this amount, but it must, I think, be reckoned by millions. But although the building of churches shows, I think, no falling off as to numbers, it is a lamentable fact that from the point of view of architecture there has been, for several years, a distinct retrogression. We cannot conceal from ourselves that church architecture in Ireland has fallen upon evil days. However much we may be disposed to blame the leaders of the Gothic revival in Ireland for having, under the influence of Pugin, adopted the English parish church as their model instead of seeking inspiration from such beautiful examples of purely Irish works as are to be found in Cashel, Holy Cross, Cong, and Kilkenny, to name but a few, still we must admit that they, at all events, were earnest men, and that their works are remarkable for beauty of design, honesty of intention, and sound construction. Can we say as much of our church architecture of to-day? Is it not, on the contrary, too often characterised by the absence of every one of these qualities? Intricate in design, yet absolutely without interest, the majority of modern Catholic churches are nothing short of a disgrace to the country. Flimsy in construction, ill-considered in plan and arrangement; made ridiculous by ill-placed, senseless carving, and pretentious, but absolutely inartistic detail, these churches have been decorated internally in a manner of which, literally, I cannot trust myself to speak.

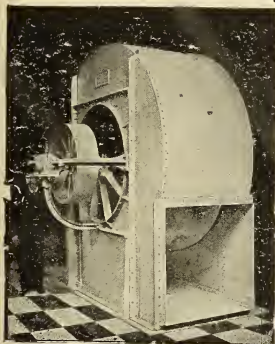
"Incompetent Architects and Pushful Travellers"

It is safer for me to quote the words of a writer whose opinion on such a subject is valuable, and whose acquaintance with the facts is unquestioned. In an admirable paper read at what is known as the Maynooth Union in June last, Father O'Donovan, of Loughrea, stated, as his deliberate opinion, that the decorative work in our churches was without exception as bad, artistically considered, as one could possibly conceive. "We have," he said (that is, the clergy of the Catholic Church in Ireland) "hitherto allied ourselves with the Philistines in art, and have followed the lead of incompetent architects and pushful commercial travellers from Birmingham and Munich. There is scarcely a church in Ireland that has not one or more stained glass windows. In some of the larger churches the cost of these windows runs up to £3,000 or £4,000, and in almost all cases this glass is, from the standpoint of art, beneath contempt." With every word of what Father O'Donovan has said I fully agree, yet I do not despair; on the contrary, I am filled with hope, because I believe that the lowest depth has now been reached, and when things come to this pass, they usually mend. But I have another and a brighter reason for hope. We must not forget that Ireland has a sound tradition—interrupted but, I think, not altogether lost—of fine architecture, distinctively and peculiarly Irish; while in the decorative arts, such as stone carving and metal work, our pre-eminence in the past is almost universally admitted.

Distinctive Irish Work.

I know it has been said that outside the early Romanesque work there is little or nothing distinctively Irish in our architecture, and that the Gothic work of, say the 13th, 14th, and 15th centuries was largely English. This is, however, an erroneous opinion, and here I will call as witness a writer whose authority can hardly be questioned. I mean Mr. James Fergusson, whose "History of Architecture" is still the standard work on the subject. Writing of the architecture of Ireland, he says:—"After the conquest of 1169, the English introduced their own pointed architecture. . . . but beyond the pale their influence was hardly felt; whatever was done was stamped with a character so distinctively Irish as to show how strong the feeling of the people was, and suffi-

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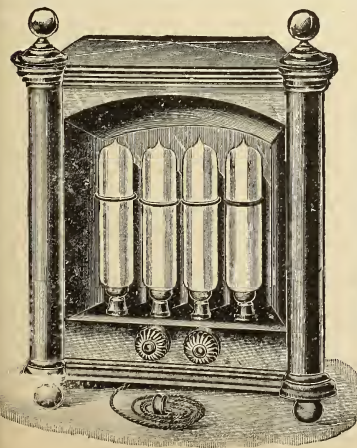
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cient to prove how earnestly and successfully they would have laboured in the field of art had circumstances been favourable to its development." All the Gothic work in Ireland was, in fact, marked by what Mr. Ferguson calls a foreign (that is, an un-English character), while the cloisters of Muckross, Holycross, and Kilconnell are, he says, more like those to be met with in Sicily or Spain than anything in the British Islands.

An Art Revival in Ireland

But perhaps I have said enough about the distinctively Irish character of our architecture in the past. Let me turn again to the present, and more especially to the future, for already I think I can see the beginning of an art revival in Ireland. Though little more than a ripple on the surface of the water, it is there all the same, and indicates, if I mistake not, the onward flow of the tide. I do not care in the least whether you call it Celtic or Irish, there is a movement around us which is national in the widest sense—not in any narrow, or party, or political sense—a movement which has already given us that most astonishing revival of the Irish language, and a revival less marked, but very real all the same, of music and literature. That this, in the true sense national movement, is certain to affect the artistic life of the country I, for one, cannot doubt. And I think, then, Father O'Donovan's paper, from which I have quoted, is a remarkable sign of the times—all the more remarkable when we remember the audience to whom it was addressed. I think it indicates that the clergy of the Catholic Church, who, you must remember, are the dispensers of enormous sums of money on architectural and decorative art, are at last awakening to a sense of their responsibility in this matter, and will no longer be led by an incompetent, careless architect, or the pushful art-bagman. If this is so, we may, indeed, be on the threshold of a brighter and better era, for as soon as the general level of taste has risen, and the demand for real art exists, the artist and the craftsman will be found to supply it.

What We Can Do

If I am reminded that all this is largely a question of money, and that one cannot afford to employ artists to paint the walls and windows, or carve the capitals and string courses of every country church, the answer is that half the country churches would be very much better without either carving or painting. If, in future, we will leave out the Carrara marble altar, with its bristling reredos, the vulgar stained glass from Germany, and that impertinent carved oak pulpit from Belgium, and put the money into honest masonry instead, it will have cost us nothing, and we will have done a good stroke of work for architecture and for Ireland. But when carving and painting are desired, let our first care be that they are not only good, but the best, artistically, that we can possibly procure, and until we have money enough to do this, we must omit them altogether. Think how much better many a nave arcade would look to-day if all capitals had been left in the rough, or if the money wasted on carving ten badly had been spent upon doing one well. That one capital well carved would not only have been a joy to all who saw it, but would have served as a model for the emulation of those who, in after years, might be called on to carve the rest. The objection on the score of cost must, therefore, fall to the ground. If good decorative work is too expensive, we can go without; or, better still, of course, we can have a little of what is good, though costly, instead of a great deal of what is cheap, but nasty. It is in this spirit, I think, that we should look at the question of church decoration, but first, and above all, we must see that our architecture itself is beyond reproach, for though bad decorative work will ruin an otherwise beautiful building, no excellence of decoration will atone for errors of design or detail in the building itself. It is, therefore, to our architectural design that we shall have to devote our attention in the first instance, if we honestly desire better things. And here I must confess I am confronted by a very real difficulty, for even if I saw the way quite clearly myself (which, indeed, is more than I can pretend to do), it would be impossible for me, within the scope of a short paper like this, to do more than indicate, in a general way, the path which we should

attempt to follow. As a first step on our road we must break with the evil practices of to-day, and then, turning to the past of our own country for inspiration, let us study, in the first place, at least, the simplicity and dignity so characteristic of our earlier Gothic buildings. Thus, and thus only, I think, can we hope to lay the foundation of a really national architecture.

— o —

"Duresco" in 1901-2.—Following upon the painting of the Paris Exhibition and the Glasgow International Exhibition in this well-known and justly praised material, we learn that "Dure-co" has again scored, in the South of Ireland this time, it having been specified for the buildings of the Cork Exhibition, 1902. The soft and mellow appearance of well-carried-out Duresco work is a pleasure to all interested in the painting of plaster, stone, cement, wood or brick, whether outside or inside. We have also seen some admirable results from the hands of leading decorators highly decorated and gilded upon, showing that it is capable of any treatment in competent hands, as well as for plain effects. It is only a question of time when Duresco will be even more largely used, for with it no washing off or scraping off is required for renewals. It binds together many a badly-plastered wall, and has the durability and appearance of flatted oil-painted work, and is all that the manufacturers claim for it—economical in use, artistic in finish, and durable in results. "Imitation is the sincerest form of praise." Duresco has many imitations.

OBITUARY.

THE RIGHT HON. SIR RICHARD MARTIN,
BART., P.C., D.L.

By the death of Sir Richard Martin, Dublin has lost one of its foremost business men, and one who represented the best type of Irish commercial progress and integrity. All his life closely connected with the building trade, through his business as a timber merchant, the late Sir Richard will be much regretted by all who had business dealings with him. Foremost in every charity and good work, within our own personal knowledge, not once or twice, but again and again, was a kindly action done by him to some old customer, or struggling builder in temporary embarrassment, and done, too, without either show or ostentation. Held very high in the respect of his fellow citizens, Sir Richard Martin occupied many public offices with credit to himself and advantage to those whose interests he represented. He was intimately connected with the commercial life of the Irish capital, and he was a public man of the first importance, not alone on account of his commercial interests, but also by reason of his abilities and the zeal with which he threw himself into public affairs. He gained a position of influence such as few commercial men could rival. He was born in 1831, and at an early age engaged in commercial enterprises. His family had been connected with the trade of Dublin for many years. He took a keen interest in politics, taking his stand on the Unionist side, but his politics were always of a broad-minded and liberal character, never pushful or aggressive towards those who differed from him. So far back as 1866 he served the office of High Sheriff of the City of Dublin. He was also a Justice of the Peace, and a Deputy Lieutenant for Dublin. Since 1885 he had been a member of the Loan Fund Board; he was Deputy Chairman of the Royal Bank of Ireland; he was the first Chairman of the Port and Docks Board, elected under the extended franchise; he was a director of the British and Irish Steam Packet Company, a Commissioner of Merriion-square, Chairman of the Dublin Artisans' Dwellings Company, a Commissioner of the Irish Lights, a member of the Dublin Local Marine Board, and a member of the Council of the Chamber of Commerce, of which latter body he was at one time chairman. In 1896 he was sworn in a member of the Privy Council—a very signal honour for a business man, and one which showed the pre-eminence of his position in the commercial life of Dublin. As an employer he held an enviable reputation amongst the workmen of Dublin. His firm, the great timber establishment of Richard Martin and Company, has always been noted for the amicable relations that have subsisted between the masters and men.

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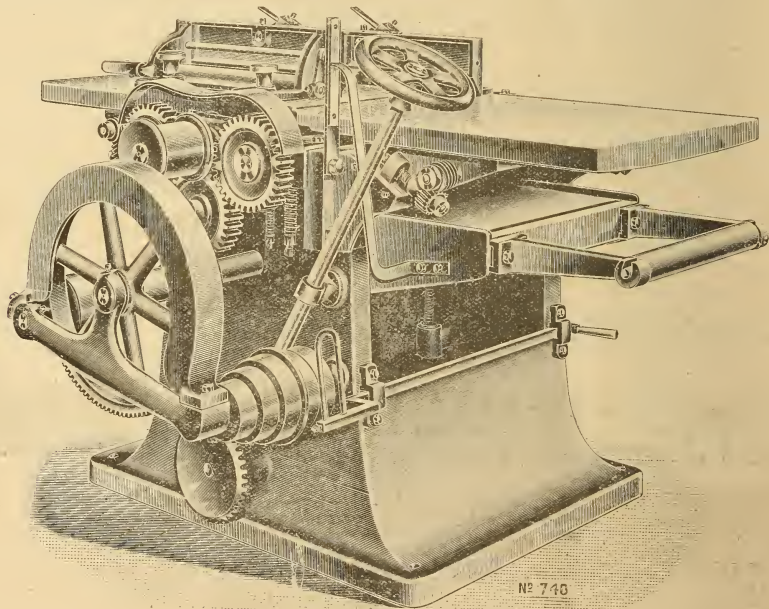
The various adjustments are simple and convenient to the workman, and no time is lost in making changes, as there is practically nothing to change; no portion has to be taken off, or anything added; no part is in the way of another part, and, therefore, nothing is liable to get lost or misplaced. When the tables on which the stuff is placed for passing over the cutters are once set, they do not require raising or lowering when it is required to plane under the cutters, and the only motion required in setting the lower table for the various thicknesses is made by turning a single hand-wheel, a gauge being provided for showing at a glance the thickness at which the machine is arranged to cut.

The cutter-block and spindle are forged in one piece from a special quality of fine steel. It revolves in two extra heavy

OUR BELFAST NOTES.

Messrs. Leahy, Kelly, and Leahy, the leading retail tobacco merchants, have re-modelled and enlarged their principal premises in High-street and Cornmarket. The entrance alterations have been carried out under the direction of Messrs. Graham, Watt, and Tulloch, by the contractors Messrs. Courtney and Co., for the buildings, and Mr. Jno. Andrews for the shop-fittings. Every facility for meeting the requirements of an extensive trade has been carefully studied. We must say the material and workmanship reflects great credit upon the contractors.

Willowfield Parish Church has undergone extensive alterations at the hands of the contractor, and was re-opened for service on Saturday afternoon last by the Lord Bishop of Down, Connor, and Dromore. The alterations have been worked out on the lines of the first architect of the church, the late Mr. John Lanyon, and his detail has been closely followed, so as to keep the new portion in harmony with the old. The Chancel has been laid with encaustic tiles, and the walls covered with mosaic. The work has been carried out by Mr. John Keith, of Glenravel-street, and a number of leaded windows by Messrs. Ward and Partners, under the direction of Mr. Fennell, M.R.I.A.



"Premier" Hand and Roller-Feed Surface Planing, Molding, and Thicknessing Machine.

phosphor bronze bearings; those in the No. 1 machine are each 5 inches long; those in the larger machines are 6½ inches, 8¼ inches, and 10 inches long each. The cutter-block is of an improved form, which gives a shearing cut with straight cutters.

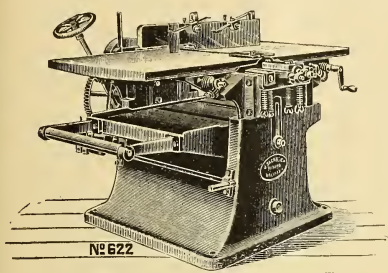
The gearing for driving the feed rollers is all arranged on one side of the machine, so as never to be in the way of, or dangerous to, the workman. This is an improvement, as in those machines where the feed gearing is arranged partly on one side and partly on the other, the moving belts and wheels are very dangerous to the workman, and, through not being able to get sufficiently near the machine (by reason of the gearing being in the way) he cannot do as much in a given time as can be done on the "Premier."

The illustration we produce gives a good idea of the appearance of the machine, which is made in four sizes—to plane 15 inches wide by 6 inches thick, 20, 24, and 30 inches wide by 7½ inches thick.

The makers are Messrs. Sagar and Co., Ltd. of Canal Works, Halifax, who, we are sure, will be glad to answer the inquiries of any of our readers. The speciality of the firm is machines to assist joiners and builders in economical production.

College-street Reformed Presbyterian Church has just been entirely re-built, to the designs of J. J. Phillips, Esq., M.R.I.A., and we must say he has turned out a very neat and compact building. The main entrance is in College-street, with cloak-rooms on either side of the porch; lecture halls and class-rooms are on first floor. The building was entrusted to Mr. Thomas MacMillan, Ormeau-avenue; and the stained-glass windows to Messrs. W. F. Clokey and Co., King-street, Belfast.

Quick Hedge.—A quick hedge is literally a "live hedge." It might legally be construed to apply to a holly or box hedge; but it is popularly applied to a hawthorn hedge, from the fact that hawthorn is the most common and suitable tree for this purpose. Quick, in the sense of living, is an obsolete word; the old translators of the Bible used it, hence "the quick and the dead," and it lingers in connection with a living hedge. As a word, it may be accounted one of the lost gems of the English language. The rustics of Yorkshire use this word to-day in a corrupted form; if they come across a plant or an animal that is alive, they will say "it's wick."



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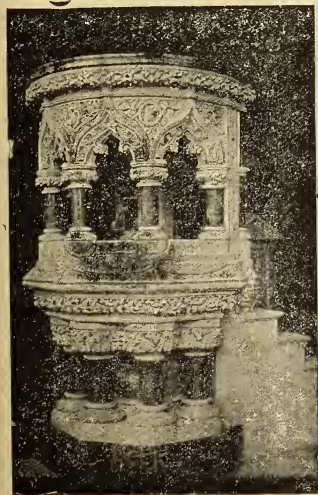
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[WIRE]

CORRESPONDENCE.

DUBLIN ELECTRIC LIGHTING.

TO THE EDITOR OF THE "IRISH BUILDER."

DEAR SIR,—Re the above, the obvious has come to pass, and already the promoters of this "wild cat scheme" in the Corporation are carrying out the policy which long since I had predicted would be the line they would take, viz., that the revision of the original estimates, and the reduction therein, were merely the handful of dust that they picked up to throw in the eyes of the supine citizens, and were never meant to exist longer than the breath that formulated them; for, even at this date, what do we see? Already the requisition to the Council for £700 and odd for extension cables for Clontarf (passed). Again, at the quarterly meeting of the Council for Monday, October the 7th, on the agenda paper No. 155, 1901, we find among the reports for first reading, a report of "the Electric Lighting Committee recommending the addition of glazed-brick lining to the contract for building the electric light station at the Pigeon House Fort at a cost of £920 (No. 144)!" These are the glazed bricks which "Mr. Hammond," in his revised estimate, stated were unnecessary; if they were unnecessary then, why are they necessary now? If they are not necessary now, why are the citizens to be mulcted in this sum, and what reason can be adduced for this sudden change of plan? I understand that these are only the commencement of a considerable number more of "reports" to be sent in to the Council from time to time until all the items that were eliminated (to soothe the citizens) will be restored to their former positions, probably at increased cost. While upon the subject of the Pigeon House Station, I should like to have an authoritative statement as to the foundations (or want of them) that Mr. Stewart has found there. I understand from one member of the Corporation that there was a statement made by the "Admiralty expert" (whoever or whatever that gentleman may be), that the foundations were excellent. If this statement is accurate, why is it not published to the city at large, with the author's name attached to it as a guarantee of good faith? It would do more to reassure the public than all the official statements of the leading members of the Corporation. There is another point which I think will yet claim the attention of the Board of Trade, and probably cost the citizens a considerable sum. I allude to the way the present cables are being laid. Under the Board of Trade rules the iron troughs shall be a clear $\frac{1}{4}$ in. in thickness, and bonded with a copper bond. Now, what is the actual state of all the troughing laid. I have measured, and so has an eminent engineer in this city, a number of these troughs, and find they do not come up to the standard, being only about some seven-thirty-seconds of an inch thick, and the bonding, if any one can call it bonding, consists of about a number 8 copper wire run through the troughing from end to end, and supported at intervals on nuts in the sides of the troughs. Whether this is "troughing" or "bonding" under the terms of the Board of Trade order or not, is a matter for that body, who are supposed to safeguard the interest of the ratepayers. Probably they may have been asked to consider the terms of their order, and may have modified their original rules. But when the rules were made, I presume that the Board of Trade carefully calculated the factors of safety in the matter of high tension currents, such as these cables will convey, and issued their order after due deliberation. This being so, why has this change taken place? Another point—I believe it has been the invariable rule that when the streets are broken up by any persons, the gas or other companies, that the relaying and repaving is done by the Corporation under the direction of their engineer. In the present instance I understand the contractor is doing it. Why is this, and will it not eventually cost the ratepayers much more?—Yours etc.

October 17th, 1901.

C. E.

The net profits of the Liverpool trams for the nine months ending 1st June, were £40,000.

MEMORIAL TO THE LATE SIR THOMAS DEANE, R.H.A. ARCHITECT.

The monument which we illustrate has been erected at Dean's Grange Cemetery as a memorial of the late Sir Thomas Deane, undoubtedly the foremost architect of his day in Ireland. The monument was designed by his son,



Monument erected in Memory of the late Sir Thomas Deane, Architect, R.H.A.

Mr. Thomas Manly Deane, A.R.H.A., and is a striking and original piece of work, which has been exceedingly well executed by Messrs. Harrison and Son, sculptors, Great Brunswick-street, Dublin.

Artificial Stone in Germany.—According to a Consular report to the Government of the United States, the artificial building-stone industry has taken a considerable development in Germany. The raw materials are lime, preferably hydraulic, and sand—the cleaner the better. After grinding, the lime is mixed with the sand in the proportion of 4 to 6 per cent. of the total bulk. The mixture is then pressed into bricks and transferred to a steel drum, where it is subjected to the action of steam at a pressure of about 120 lb. per square inch for about ten hours. Under the action of the steam a silicate of lime is formed, which acts as binding material. The bricks are ready for use on removal from the drum in question. Mouldings are as easily produced as rectangular work. The bricks thus manufactured are said to be both cheaper and stronger than ordinary brick, the crushing strength being about 500 tons per square foot. The factory needed is small, as compared with the output, and work can be carried out all the year round.—*The Builder.*

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

THOMAS ARCHER, New Row, Dublin.—There are several manufacturers of acetylene gas plant. One of these firms is Messrs. Husson's Safety Acetylene Syndicate, Limited, Victoria Mansions, 28 Victoria Street, Westminster, London, S.W.

THE IRISH BUILDER

A JOURNAL DEVOTED TO

ARCHITECTURE, ARCHÆOLOGY, ENGINEERING, SANITATION,

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Every Second Thursday.

[Estab. Jan 1859.]

No. 1,005—Vol. XLIII.

HEAD OFFICE

NOVEMBER 7, 1901.

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OUR INTERVIEWS.

Mr. ARTHUR HILL, M.A., B.E., FR.I.A.B., &c. Architect.

Mr. Arthur Hill is one of the leading architects in the South of Ireland. He has done good work all over the South—and few Corkmen are more deservedly popular. He has been long in practice in Cork, and enjoys an extensive connection. He is a Master of Arts and Bachelor of Engineering of the Queen's University, a Fellow of the Royal Institute of British Architects, and of the Royal Institute of Architects of Ireland. He is an old and valued member



MR. ARTHUR HILL, M.A., B.E., FR.I.A.B., &c.

of the London Architectural Association, and a regular attendant at the pleasant annual excursions. Mr. Hill is a highly accomplished musician, and on the excursion his services on the occasion of the annual smoking concert are in great request, and when he misses an excursion his absence causes a gap impossible to fill.

Mr. Hill's father was an architect, and a charming water-colourist as well, so we can imagine him building castles in the air when in the petticoat of the period. In due course he entered the Queen's College and took the diploma of "C.E." (afterwards converted into the Degree of B.E.) in 1865, with Honours. Mr. Hill then went to London, and spent a year in the office of Mr. W. H. Wyatt, and a couple of years divided between the West London School of Art and the Royal Academy, of which he had by this time become a student. During this time in London Mr. Hill could not but be forcibly struck by the want of proper training for architects, as compared with what young engineers could obtain in several Scotch and Irish Universities, and he wrote a paper, entitled, "College Training for Architects," which was read at an Architectural Congress, advocating the need for placing Engineering and Architecture on the same edu-

cational footing in the several Universities in the Kingdom. Since then the American Universities have stepped in and established such schools. A generation has passed, and in this year of grace, 1901, there is *one* student in the United Kingdom of Great Britain and Ireland entered for the Degree of B.A. in Architecture. The Victoria University, to its honour be it said, having established such a degree in the Architectural School of Liverpool University, their first student has been duly entered a few weeks ago.

Amongst the prizes won by Mr. Hill during his student days were:—South Kensington, National Medallion in 1865, and several Bronze Medals; London University College, Donaldson Silver Medal; Royal Academy, Silver Medal and Life Studentship; R. I. B. A., Silver Medal (twice) for Measured Drawings.

Mr. Hill was appointed Lecturer on Architecture to the Queen's College, Cork, some few years ago, and delivered several courses of lectures on the History of Architecture, but owing to the way in which the progress of the colleges had been cramped, had not opportunity for attempting to carry out his ideas on the subject of an Architectural School!

In 1870 he published *Illustrations of Ardfert Cathedral*, and *Kilmallden Church*, in Kerry, and *Cormac's Chapel* in Cashel, in 1874.

ELECTRIC DEVELOPMENT.

WATER v. STEAM.

(SPECIAL ARTICLE.)

By H. T. HARRIS, C.E., DUBLIN.

(CONCLUDED).

Power Going to Waste.

Just fancy what these powers mean, and consider the future of our old and trusty steam railways, which will, in this 20th century, be wiped out, and electricity, generated by water power, or by steam at the coal pit head, will have taken the burden off the locomotive. The storage of water can generally be accomplished by means of dams, and storing water in some cases would work out cheaper than the storage of electricity. In the case of storage of water you would consider the place that it could be most easily pocketed, and then a channel to the best point to get the highest fall. Unfortunately, we do not know what electricity is, or we might deal with it as we do with water, and put it in a reservoir to be kept till further orders. Before leaving the water supply, I would like to point out that Dr. Robert Kane, in the year 1844, gave the average inches of water that falls over Ireland as 36 inches per annum, this average being arrived at over six years' test, and thus he says—
"100,712,631,640 cubic yards of water fall on Ireland in a year. The water evaporated from water should practically balance the rain that falls on water, but the water that falls on soil evaporates to the extent of about 75 to 60 per cent. of the fall, and thus shows that about twenty-five thousand millions of cubic yards of water flow down the Irish rivers per annum. I should think that if the absolute theoretical power was ascertained for Ireland it would closely figure two millions," and, supposing that only 5 per cent. of this would pay for equipping, we would have 20,000 horse power, but I should say, be quite safe in taking 20 per cent., which would equal 80,000 horse power. The most ancient motor was the water wheel, and they were divided into three classes, overshot, breast, and undershot, and had an efficiency as follows: Overshot, 60 per cent. to 75 per cent., with a limit of head of water of 50ft.; breast wheel, 50 per cent. to 60 per cent.; and undershot wheel, 35 per cent. to 40 per cent. efficiency,

and from these figures it will be seen that high water falls could not be handled as easily as with a turbine. One great drawback the old water wheels had was the slow speed they revolved at, and this meant a train of cog wheels to increase the speed for driving machines, and this train of wheels meant a further loss through friction of power and efficiency. The first cost of building and constructing works for water wheels was also very costly, and the repairs were heavy, but even with the old water wheel, no steam power could compete with the water power on the site, and far less can the steam engine compete with the modern turbine. Turbines are divided into two classes—namely, the Impulse and the Reaction, and each of these classes is divided into several types having the flow of water differently directed, and these may be separated under each class:—

IMPULSE.

REACTION.

Radial outward flow.

Radial outward flow.

" inward flow.

" inward flow.

Axial flow.

Axial flow with or without

Pelton wheel.

a Suction Tube.

Turbines can be built of any h.p. efficiency in accordance with the fall to be utilized. Turbines and dynamos can be connected on the same shaft, and thus save all frictional losses. The turbine machines in present use claim from 70 to 80 per cent. efficiency in operation. Plant—This is a very difficult question to fully and clearly define, but I will endeavour to give some idea of the capital outlay. After carefully going into the capital expenditure of electric light stations in England driven by steam we find that the average capital required per 1,000 lamps of 8 candle power installed, comes to about £1,200. Now, to get the capital required in a water power station. The size of the buildings can be reduced, because we require no boiler or coal house, and the cost of turbines is less than the steam engines, pumps, tanks, economisers, chimney stack, etc., which are not required in a water power station, but the cost of construction of turbine pits will in most cases exceed the cost of engine and boiler foundations; the turbine does not wear out half as fast as boilers and engines do, but this should be considered under "depreciation" account.

Cost of Upkeep.

The first point to consider in running a station is the question of labour; secondly, fuel; and thirdly, oil and repairs. Now, to bring these items out as low as possible every engineer tries to limit his units of plant, and finds it necessary to have a reserve plant to the extent of 25 per cent. of the average demand. Having determined the amount of reserve plant, we come to the number of units or sets of plant requisite to make the station efficient, and this depends on the way in which the load comes "on" and "off," because it would be very costly to run a large engine at one-eighth of its load, as its coal consumption would eat up its profit. Now, suppose we have a station with four units, and this station requires three sets of men to run it for 24 hours per day, and each shift will necessitate the following:—

1st Shift.—4 P.M. to 12 P.M.

3 Engine drivers	28s. per week.
2 Boiler Stokers	22s. " "
1 Coal Trimmer	18s. " "
2 Electricians	40s. " "

2nd Shift.—12 P.M. to 8 A.M.

1 Engine Driver	28s. per week.
1 Stoker	22s. " "
1 Electrician	40s. " "

3rd Shift.—8 A.M. to 4 P.M.

1 Engine Driver	28s. per week.
1 Stoker	22s. " "
1 Electrician	40s. " "
2 Cleaners	20s. " "

Now, in a water power station taken of the same size, and with the same number of units, we shall be able to run the station with:—

1st Shift from 4 P.M. to 12 P.M.

1 Greaser	22s. per week.
2 Electricians	40s. " "

2nd Shift. 12 P.M. to 8 A.M.

1 Greaser	22s. per week.
1 Electrician	40s. " "

3rd Shift.—8 A.M. to 4 P.M.

1 Greaser	22s. per week.
1 Electrician	40s. " "
1 Cleaner	20s. " "

Economy of Water Power.

Thus the saving in the water power station comes out as follows:—No skilled stokers, engine drivers, or coal trimmers, nor coal, and less repairs and maintenance in the water power station. Now, I will set out the capital required for the working of a 10,000 candle power lamp station, and will assume the capital outlay (whether water or steam power is used) to be the same. Capital, £22,000, and on this capital say 7 per cent. per annum will have to be paid off the loan to meet interest and redemption in 25 years. Thus we find £1,440 must be earned per annum. The average consumption of an 8 candle power electric lamp per annum is 20 units of electricity. Thus we get 10,000 lamps multiplied by 20, units, equal 200,000 units per annum, and if this be sold at 6d. per Board of Trade unit, we will get a gross income of £5,000. Now, I will set out in tabular form the cost of generation of electricity by steam power, and also by water power:—

STEAM POWER STATION TO GENERATE 200,000 UNITS PER ANNUM.

	d.
Wages for electricians and men per unit	1.45
Coal and oil and waste	1.50
Management, law costs, insurance, rent, taxes	0.36
Repairs and maintenance	0.25
Total cost per unit	3.56d.

Thus we get 200,000 units multiplied by 3.56d., equal to £2,666 plus redemption and interest, or a gross expenditure per annum of £4,466, leaving £594 for profit.

WATER POWER STATION.

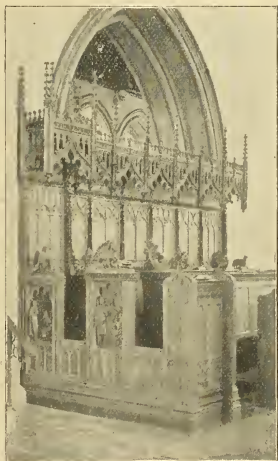
	d.
Wages (electricians and men) per unit	0.76
Oil, waste	0.05
Management and legal insurance, rent, taxes, rates	0.36
Repairs and maintenance	0.15
Total cost per unit	1.32d.

Thus we get 200,000 units multiplied by 1.32d., equal to £1,100; add redemption and interest on capital, £1,440, equal to £2,540, leaving £2,460 for profit, thus showing a nett gain in favour of the water power of £1,866, and this shows that on a water station of 10,000 lamps a town could get the electricity at 3.6d. per unit, while if generated by steam, the charge of 6d. per unit would have to be made. The unit of electricity can be easily calculated when comparing gas with electricity, light for light, by taking 8 units of electricity to equal 1,000 cubic feet of gas. Thus towns charging 6s. per 1,000 cubic feet of gas equal 9d. per unit in electricity, and electricity generated by water power could give light at the rate of about 2s. 6d. per 1,000 cubic feet of gas. Of course, if electricity could be utilised fully in the daytime for driving electric tramways or factories the cost of lighting might be still further reduced. You will observe that I have taken a very small station that might suit a village or a small town, but the larger the installation the cheaper the cost of production. The foregoing is a very brief synopsis of the undoubted advantage possessed by water over steam power. My object in writing the article is not to go into any technical details, but simply in a popular way to point out to the users of electricity that vast quantity of energy that is practically going begging for some one to use it, and if my few observations should lead to the utilisation of that power, that is so largely in evidence in our country, I should be more than repaid for my trouble in writing it.

H. T. HARRIS, M. Inst. C.E.I.

CARVED OAK STALLS AT ST. CANICE'S CATHEDRAL, KILKENNY.

Amongst the priceless remains of the Middle Ages which have been preserved to us in this country, the Cathedral of St. Canice's, in Kilkenny, takes a foremost place, both as regards its historic associations and architectural beauty. Its grey walls, with their battlemented parapets and traceried windows dating from the earliest years of the thirteenth century, just after the invasion of the proud Norman barons, down to the latest epoch when the "Ogival" style ceased to exert a living influence over the architectural progress of the fifteenth century, along with its lofty and silent witness of a far earlier age, in the shape of its Round Tower, refuge in ages past from the inroads of the ravaging Norsemen and the roving Scandinavians, this venerable cathedral, mother-church of the ancient kingdom of Ossory, still stands in our midst as a sturdy witness to the devotion, the zeal, and the exquisite taste of our forefathers. The traces of the ravages of war and civil strife, and of the many troublous periods in the history of our land are indelibly



The New Cathedral Stalls, St. Canice's Choir, Kilkenny.

marked thereon; its arches, and its buttresses have seen long processions of vested ecclesiastics, with mail-clad knights and saffron clothed shaggy Irish kerns and gallow-glasses, pass through its aisles; the stream of human life, age after age, has eddied round its massive pillars, leaving it as a sacred heritage to our people and our nation. In its exterior form, and the conformation of its plan, St. Canice's Cathedral embraces the peculiar characteristics as well as the actual edifices of two races, showing, as it does, the distinctive types of the Hiberno-Byzantine and early English styles. Within the precincts of the present cathedral are included portions of the earliest stone church, founded in Kilkenny long before the builders had commenced to lay the first courses of the circular foundation of the Round Tower, on the site of an early Christian cemetery; as was proved in the explorations carried out some years past by the late Mr. John G. A. Pim: whose name is indissolubly connected with the restoration of the venerable cathedral. Every succeeding age has left its imprint, both on the exterior as well as the interior of the grand old church; to the eye of the antiquary, as well as the man of culture, the study of such a building as St. Canice's is full of deep pathos; the evidence it affords of the loving care and deep thought: so lavishly bestowed by the men of past ages, on all that appertains to the raising up and completing of an edifice destined to the service of their Creator; in which all

that was best and noblest and most precious, in the arts of their various periods, were given without stint or measure to decorate the great and noble temple of the city of St. Canineach. The richest and rarest glass, as we know by its records, once filled its lofty windows like sparkling gems, exciting the desire of even the sons of artistic Italy to become possessors of such translucent treasures; its walls, of a warm and pleasant tone of colouring, were decorated with graceful arabesques, of which a few traces still remain in various parts of the building; for the men of the Middle Ages did not set richly dight windows in cold bare walls; *all the interior* was glowing with colour, light, radiance, and warmth. Even its very pavement was a record of the history of the city which had grown up around the massive walls of this Irish minster on the banks of the pleasant Nore. Beautifully incised sepulchral slabs dating from the early years of the thirteenth century (as recorded in the pages of the erudite John O'Phelan, and illustrated in the history of the Cathedral by the late Rev. James Graves and John G. A. Prim), along with finely carved effigies of brave knights and barons, and ladies fair, covered the whole area of the nave and aisles; whilst high above was the cerulean blue ceiling studded with golden stars such as we still see in the cathedral of Ely and the Sainte Chapelle of Paris. The beautiful temple was lovingly furnished with all that appertained to the needs of divine worship; similar, doubtless, in this respect, to the neighbouring cathedral of Waterford, the inventories of which show what a treasure house, like itself, Saint Canice's Cathedral must have been before the close of the fifteenth century. But a time came when, in the midst of civil and internecine struggles, all these works of art and "things of beauty" were ruthlessly destroyed and swept away, as they have invariably been in such troubled times. It is impossible, nowadays, to state accurately what was the prevalent type of the "furniture" of St. Canice's, previous to the year 1650, all forming a scene of unsurpassed artistic beauty and refined completeness; far removed from the cold greyness and nudity of modern days. The vista of the high choir and chancel, with their aisle chapels divided from the nave by richly-carved screens, must have been strikingly grand, previous to the fall of the central tower in the year 1332, when the whole of that great structure, with its pyramidal spire, crashed down into the choir aisles, "so that it was a horrid and pitiful sight to the beholder," as is related by the learned historian, Frair Clyn, who was an eye-witness thereof. Taking the types of the arcades, colonnettes, cusplings, capitals, and figures, shown on the tombs as well as in the exquisite facade of the little doorway (once in an interior screen, but now built into the outside wall opposite the Bishop's Palace), we may infer that the general style of the furniture of the church at the close of the fifteenth century was that of the Late Decorated and Flamboyant periods, similar in type to the beautifully carved Sedilia and Relic Shrine, or "Feretrum" which still exist in the choir of Holy Cross Abbey, Co. Tipperary. This antique doorway was chosen by Mr. M. J. C. Buckley, when designing the stalls, as the "type" of their style, on account of its most interesting and very characteristic ornamentation. Not a trace remains of any of the wood or metal work which must have been erected in the cathedral during the course of ages; the destructive agencies of wars, along with the incongruous restorations carried out in the Neo-Classic and Georgian styles of the last two centuries have utterly destroyed all the works of art which would have been so valuable to us at the present day if they had been allowed to remain as historical heirlooms. However, thanks to the indefatigable labours of distinguished archaeologists and artists, not only in our island but throughout the length and breadth of Europe, and owing to the studies and designs of such men as Welby Pugin, W. Burgess, Street, and Ruskin, in England; of Monsieur Didron, Viollet-Le-Duc, and a host of others in France; of Overbeck, Cornelius, and several in Germany; and of Petrie, Stokes, Brash, and Drew, in our own country, we can form, at the present day, a much more rational and intelligent idea of the actual fittings, furniture, and ornamentation of such a mediæval building as St. Canice's, than our forefathers could do. And now, aided by the lights and the knowledge gained during the past

century, a new and worthy work has just been carried out in the choir of St. Canice's Cathedral, namely, the splendid series of carved oaken stalls, which have lately been erected in the antique edifice. These stalls are designed and executed in the most ornate style of the fifteenth century (similar in treatment to the framing of the beautiful little door in the outer wall opposite the Bishop's Palace, to which we have already alluded, and of which an illustration is given), and are splendid specimens of wood carving carried out in the most finished and artistic style. These productions of the famous school of Flemish wood-carving of Bruges in Flanders, they belong to the same period of art as the stained glass of the choir windows, fragments of which still exist in the Kilkenny Museum; this glass was also designed and stained in Flanders, just like the Flemish brasses which formerly decorated the pavements of so many of our Irish and English churches. The new



The Old Doorway at Kilkenny, which suggested the style of the New Stalls to Mr. Buckley.

oak stalls extend along the north and south sides of the choir to the present organ case and Bishop's throne, to which they form a striking contrast in their beautiful lightness and delicacy of workmanship. There are three rows of seats, accommodating the canons and dignitaries of the cathedral in the upper row, in which the "sedilia" or seats are exactly similar to those still remaining (but in an incomplete condition) in the choir of the small and very curious cathedral of St. Laserian, at Old Leighlin; the name of each canonry being carved on the back of the stall belonging to the same dignitary, the two lower rows of seats being occupied by the minor canons or choirmen and choirboys, exactly as we still see them in so many noble cathedrals and abbey churches. Jutting out beyond the other stalls, on account of the projection of the moulded pillars of the choir arch, are those of the Dean and the Precentor of the Chapter; the "dosiers" or backs of the stalls are all carved with different patterns in rich tracery (all these complicated patterns of tracery were planned and drawn out for working by Mr. Richard Langrishe, the cathedral architect), such as exists on the stalls of St. Salvador's Cathedral at Bruges, wherein was held one of the last public Chapters of the Knights of the Golden Fleece. Each stall is divided from the other by pinnacled buttresses which support coved canopies, every canopy having a richly cusped and traceried gablet of "Ogee" form, with exquisitely carved finials and tall crocketed spirelets on their pinnacles; a lovely frieze of oak leaves and acorns capped by an elaborate cresting surmounts the open arcading in the upper portions of these stalls. On the massive ends of the book rests are placed

most spirited carvings of Scriptural emblems such as the Lamb, the Scapegoat, Cherubim, etc., along with rich foliated cappings. But it is on the western ends of the kneeling desks of both the Dean's and Precentor's stalls that the most elaborate and beautiful carvings in oak are to be seen. These carvings are executed on panels, surmounted by cusped and recessed arches; their subjects are scenes illustrative of the story of the grand old cathedral. These subjects are:—St. Patrick at Tara, expounding Christian Doctrine before the "Ard-Righ," or head King of Ireland, on the memorable Easter morn when Dubtach, the bard, was the first to rise up, and striking his harp (as is represented in the carving), proclaims the praises of Christ, in Erin. In the panel next to this we see St. Fiace, of Sletty, in the County Carlow, composing his hymn to Our Lord, which he is accompanying on his harp, whilst a group of clansmen stand listening, in rapt attention to his verses. These two scenes being connected with music, are appropriately placed on the sides of the stall of the Precentor. On the opposite side of the choir we find the panel of St. Canice founding his first "Kill" or church in this city during the sixth century; a group of warriors and bards are listening attentively to his words. St. Canice, like St. Patrick in the scene at Tara, bears in his hand one of the serpentine-headed pastoral staves peculiar to the early Irish bishops. The panel which next follows shows the Master Builder, or the "Magister Operis" of the Norman period (or "architect," as called nowadays), his head covered with a workman's "coif," having a compass of "aparelleur" in his hand, describing to a sandaled Ecclesiastic who stands by, how he intends changing the arches of the cathedral, from the round Romanesque to the pointed style, according to the diagram of an equilateral triangle, which is traced upon the floor, the plan of the future edifice on parchment, being held by the churchman; whilst clad in mail chain and "gaberdrine" of Knight-hood, and holding his shield, charged with his armorial bearings, stands the tall and sturdy figure of William Marischal, the Norman Baron of Kilkenny, and founder of its Castle. In this panel we see the three great Orders of the Middle Ages, namely, the Churchman, the Knight, or Baron, and the Workman, who evidently belonged to that great corporation of travelling builders, who have left their "mason's marks" (still visible) on the chiselled stones of the choir arch, or "Arca Triumphalis," of the sanctuary. Surmounting these panel subjects are boldly-carved figures of the four-winged Apocalyptic Animals, or emblems of the Four Gospels; these figures are executed with great life and vigour. The whole of the lower mouldings of the stalls are deeply undercut with running branches of oak, which grasp the work with tenacity, as if growing therein; both leaves and tendrils seem instinct with life, and are quite different to the dead and flaccid foliage which one so often sees in this land. The oak wood, of which these stalls are made, is drawn from the Hungarian forests, near the Danube. Having no knots or other defects, and being of a fine, equal texture, it is admirably adapted for sculpture and carving, its golden tone and rosy tint being admirable in effect, and the richness of its hue will increase as time goes on: for the only preparation used on its surface is simply bees' wax, such as was employed in olden days. These magnificent stalls will become one of the sights of Kilkenny, and will, no doubt, attract much attention. They are the direct outcome of the gifts of many generous donors, and of the efforts made by well-wishers during the bazaar, held two years ago, for the purposes of restoration. They reflect much credit on all concerned in their execution, especially on Richard Langrishe, the learned and cultured "Magister Operis," and M. J. C. Buckley, of Youghal and Bruges, the well-known archaeologist, representative of the Arts Guild of Bruges, Belgium; and on the artists and carvers (natives of the same Flanders as the craftsmen who were brought here ages ago by the Butlers, to weave the splendid tapestries still to be seen in the Castle; and a due meed of praise must be given to the liberality and enlightened taste of the Dean and Chapter of St. Canice's for having endowed Kilkenny with such exquisite works of art as are now to be seen in the antique cathedral; "They are truly things of beauty, joys for ever."

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No. 1005

"The Management of an Office." *

"Office management"—how much is summed up in these two words!—very often the success or the failure of a man's life. It was with much interest, and not a little curiosity, that we sat down to read what Mr. Parry had to say on this all-important subject—one which, as specially applied to an engineer's or architect's office, it seems almost incredible, has not ere now formed the subject of a treatise. We must say that we felt repaid for reading Mr. Parry's book, and if we may, later, be somewhat critical, let us preface our remarks by saying that the book is one which, in these days of severe competition and accurate apportionment of working time, no architect or engineer alive to his own interests can afford to leave unread, for, in taking up and thoroughly expounding this subject, Mr. Parry has placed his professional brethren under an obligation to him.

We have said enough to convince most people that no apology is needed for the publication of such a book as this. Mr. Parry in his preface truly remarks that—

"During the first few years of practice the absence of a system entails but little inconvenience; but, as the work grows, a time will come when the methodless man begins to tell his friends that it is not work but worry that is wearing him out, while the methodical man will welcome the expansion which enables him to make his organisation more complete, and thus to keep his own personal share of work within reasonable limits."

And again he says—

"The man who wishes to make a comfortable competence, and to secure and retain the confidence of his *clients* cannot afford to conduct his practice in a slipshod, haphazard fashion. His genius may bring many new clients to his office in the early days of his career, but if experience shows that he lacks the saving grace of common sense and the business-like habits of his less talented rivals, he will find, as years roll by, that he is drifting slowly to leeward, whilst his more methodical brethren are beating up steadily to windward, until they have caught the favouring breezes which wait them to a successful goal."

This is the text upon which the whole sermon is preached. We have already noted the publication of this work on "Office Management," and in doing so said—

"Architects are proverbially bad business men (at least, so outsiders say), and chiefly for their edification Mr. W. Kaye Parry, M.A., has written an excellent treatise on 'Office Management,' which contains many admirable precepts for doing things 'decently and in order.'"

This, after a careful subsequent perusal of the book, sums up our views on the merits of Mr. Parry's work. The work of engineers and architects is of so comprehensive, fluctuating, and unavoidably spasmodic character, taking them so frequently away from their offices, that, except with a very

perfect system of doing things, more or less disorganisation, and consequent loss of energy, is inevitable. To demonstrate how this may be overcome or avoided, is the object of the treatise.

Roughly speaking, Mr. Parry divides the treatment carried out in his book under three heads. Of the 183 pages composing it, no less than 115 are devoted to the first head: the proper form, maintenance, and care of the diaries, letters, catalogues, estimates, and other of the voluminous documents with which an engineer and architect has to deal. Next we have a chapter on "The despatch of business," an admirable one; then four chapters dealing with the keeping of accounts, and, finally, an appendix setting forth the duties of the staff. In proportion to the extent of the practice, it is astonishing the mass of documents that have to be dealt with in such an office. In dealing with these, Mr. Parry outlines a scheme which he himself has tried by the sure test of long experience. Yet, to the majority of men it will seem admirable in theory only. To begin with, we have an elaborate system of diaries, a record of time spent, diary of engagements, principal's diary, drawing office diary, clerks' office diary, attendance diary, and callers' book. All valuable and admirable, no doubt, and tending to great mechanical regularity; but, if we take it that the chief object of an architect's life is not the creation of a reputation for a regularity exceeding that of the American automatic machine, we shall find the thought forced upon us that a system such as this tends to the development of the modern "plan factory," in which each individual is but a smooth-running, well-oiled bearing in an up-to-date machine rather than to the encouragement and drawing out of individual effort. Moreover, few architect's or engineer's offices outside London boast a staff of manager, book-keeper, senior clerk, junior clerk, office boy, and typewriter, or even half that phalanx, in addition to the harmless, necessary draughtsman, obscurely hidden away in the drawing office. Even in London there be few offices in which the extent of business done would justify the employment of those serried ranks. Indeed, it is not too much to say that on most architects they would have an overwearing effect, producing fear and trembling—a terrible sense of responsibility to keep all those nimble, willing fingers employed—certainly not an incitement to artistic effort or engineering originality. Indeed, the one thing which seems to be relegated to the position of least account is the work of design and creation. Let not our readers imagine we seek to belittle the value of order and regularity in any calling—far from it; but surely Mr. Parry is not serious in suggesting that a gummed slip should of necessity be pasted on the face of every "enclosure" sent in a letter? Why, many of the biggest commercial houses can do their business, and do it well, without that adventitious aid to their correspondence. We are sorry, too, to note the trail of the hideous rubber stamp all over the essay. The rubber stamp is, no doubt, an inevitable accompaniment of the times we live in; yet we confess we should rather see our budding architect take his pen in his hand, and thus express his mind on all possible occasions. In fact, the rubber stamp is a good servant, but a bad master.

However, in the book before us we are told many things that are helpful, and real aids, conducive to that peace of mind so essential to the putting forth of best efforts. For instance, we learn something of how the terrible plague of catalogues may be stayed, and even turned to good account. Most men, in their utter helplessness, turn to the waste-paper basket as their defence in this respect. Here we find a valuable lesson.

Then, in regard to the conservation of time and the despatch of business, much may be gleaned from Mr. Parry's system.

The principles and details of book-keeping laid down are in themselves excellent; but, admirable as they are, the fact that this system of book-keeping would be almost certain to require the undivided attention of a book-keeper, puts it outside the reach of the average professional man.

Granted that a man had so excellent and well-drilled a clerical staff, the appendix laying down the duties of the members thereof and the rules for their governance would be worthy of all praise.

Having said so much in criticism, let us qualify it by

* "OFFICE MANAGEMENT." A Handbook for Civil Engineers and Architects. By W. Kaye Parry, M.A., etc. London: E. & F. N. Spon, Ltd., 125 Strand, 1901.

adding that Mr. Parry has simply sketched what he considers an ideal architect's office, and that the average man of ordinary intelligence will have little difficulty in modifying and adapting to his own wants that system so well outlined in "Office Management."

Practical Mathematics. *

At last there is a reasonable chance for a practical man to acquire a good working knowledge of mathematics and allied subjects without having to waste years going through a regular routine of theory, which, however interesting from an academic point of view, is not what the practical workers require, or have time to spend in acquiring. Some time since, the Board of Education, South Kensington, formulated a programme of practical mathematics which was inspired, if not drafted, by Professor Perry, F.R.S., whose lectures and published work show how the working man with scarcely any theoretical knowledge can practically apply an extended course of mathematics to the requirements of his art or trade. In the book before us the author has very faithfully followed the South Kensington programme, and we, as a journal devoted to the interests of technical education, consider the work of such importance that we propose to deal with it in detail to some extent, and, while giving our warmest praise to the general merit and constant plan of the work, to point out those matters which, in our opinion, constitute its faults. In the chapters devoted to arithmetic, contracted long division should be arranged so that the multiplication by the number in the quotient, and the corresponding subtraction, should go on together. The least common multiple is found in an old and laborious way, while a simple explanation of its principles would suggest better expedients, more ready and more scientific. The examples given of simplifying complex fractions are suggestive of the lower benches in a national school rather than the more direct and manly methods which appeal to the adult. In the section on algebra similar defects are to be found. In the chapter on scales and graphic methods the mode of division of a line given and illustrated is absolutely wrong, where a line has, as it must have in a scale or drawing, a definite breadth. The chapter on areas has some unworkable examples, and the graphic method of finding the square root is only workable with small numbers, or on a reduced scale. All this goes to show that much thought has yet to be expended, and more ingenuity displayed in giving a practical shape to the elementary work which (hitherto taught by unpractical men) prescribes methods which can only produce slowness in execution and inaccuracy in result. In the remaining portion of the work dealing with areas and volumes, motion and energy, etc., the book takes a really practical turn, and the student who reaches this distance will find a new light thrown upon his schoolboy ideas of those subjects. The very important and practical chapter on the various uses of squared paper should, in our opinion, have been placed much earlier in the book with elementary examples, while the advanced portion could be introduced later on. The use of squared paper requires no knowledge beyond the four first rules of arithmetic, and the results bring conviction much quicker, and give a clearer conception of the conditions of a problem than can be formed by an ordinary mind from the same conclusion expressed in figures; therefore, the knowledge should not be delayed by placing it amongst the final chapters of a book which the author assumes to be studied as a two years' course. We have entered, to some extent, minutely into the criticism of this book because we admire it, and we foresee its usefulness to the practical man. It is used already, we believe, as a standard text book in one of our technical schools, and its apparent difficulties have, to some extent, been mastered by a class of tradesmen inexperienced in theory, but whose minds have been stimulated by constantly dealing with practical problems, and who become more earnest when they perceive that a way has been opened to useful knowledge and real education which, though it presents difficulties, can be followed with practical advantage. We hope later on to publish some notes on the all-important subject of practical mathematics, which will deal directly with the requirements of some of our young readers.

P. J. O'CONNOR, B.A.

* "ELEMENTARY PRACTICAL MATHEMATICS." By Frank Castle London: MacMillan & Co., Ltd. 1901.

Portrane Water Supply.

About fifty years ago came in the fad to substitute gravitation water supplies in place of wells. This, at the present time, is much more prevalent in Ireland than in England. In the first place the corporations, the unions, and private individuals, whose natural water supply ought to be wells, will not think of them, as they must have grand waterworks at great expense, and probably a worse class of water. This is the case at Portrane. As a general rule, all the coast hamlets from Howth to the Valley of the Boyne ought to rely for the best water on wells—Howth possibly might be an exception, as there are facilities for a small gravitation scheme; but the late Joseph O'Kelly and the writer, some forty years ago, after examination and consideration, in connection of a supply for Howth and Baldoyle, reported in favour of wells. Since then a well has been sunk at the Sutton Coastguard Station, whether on this report or on an independent one is uncertain. Malahide wants water, so does Rush, Skerries, etc., and all could be easily supplied from the underlying carboniferous limestone. Portrane, however, is specially favoured by Providence, it being situated on an outlying exposure of the Ordovician or Lower Silurian, which, in this special case, is eminently a water-bearing system, as can be seen by the numerous springs along the cliffs.

The writer stated to more than one interested party, when the present water supply was mooted, that it would be unsatisfactory. Chance has made it better than the original scheme, but now we hear that even with the augmented supply, they "ask for more." They say, "Oh, we can't get the Vattry." The Vattry, however, will not supply everybody. If the Dublin suburbs increase at the rate they are now doing, they will soon have to join in Lough Dan, or start wells in the high-ground, to the northward of Glasnevin, Drumcondra, and Clontarf.

It is perfectly absurd that the water supply under our feet is not used, but that we must go miles away to get a water, generally not as wholesome as that at hand. In Dublin the cry was, "The water is too hard." Well, in place of it they have got a water so pure that it eats even into the tin vessels, so that, instead of lime in the water, you now have slow poisons. See the increase of the death-rate in Glasgow, Dublin, and all other places that have too pure water supplies. In the case of Portrane, however, they could not complain of hardness, as this water would come from the slate-rock. An even sufficient supply ought to be easily procurable at Portrane. Sink a well below the sea level—say, in the Deer Park, at or about the sea level drive adits at right angles across the strata, thus leaving a dump in the well to contain the water supply. If the site of the well was judiciously laid out, possibly there would be no necessity to run adits; while, on the other hand, if the water supply was less than that required, the adits at any time could be lengthened, and thereby the drainage area increased. Or why not adopt the plan found so efficient in North America? Put down bore-holes, and pump up the water by Archimedean windmills, similar to those dotted over the prairies at the towns and ranches. If you traverse Allsta by the Canadian Pacific Railway, you go through large areas that have no surface water, but nearly invariably, if they bore, they get an under supply, but not always, as one bore gave oil instead of water. This, however, would not be the case at Portrane. In England, if they want a water supply, they invariably consult the Geological Survey. In Ireland they rarely do so, until they have expended great or less sums unsuccessfully. Why do not the parties responsible for the water supply to the Portrane lunatics consult the Directory of the Geological Survey of Ireland?

G. HENRY KINAHAN.

Royal Institute of the Architects of Ireland.

Mr. G. C. Ashlin has been elected President in succession to Sir Thomas Drew, P.H.R.A.

This is the first election held under the new bye-laws, and the office will be held for a term of three years only.

BOOKS.

NOTE.—The Editor will thank Publishers tending books for review to kindly state price.

The CEMENT USERS' AND BUYERS' GUIDE. By Calcare. London: E. and F. N. Spon, Ltd., 125 Strand. 1901. Price, 2s. 6d. nett.

This is an extremely useful and handy little book, neatly bound in limp leather binding, for the waistcoat pocket, and contains in a small compass a large amount of useful information, and is divided into four sections:—Section I.—Short history of cement-making, process of manufacture, characteristics, testing, etc. Section II deals with the use of cement, mixing, proportions, methods of use, etc. Section III. deals with how, when, and where to buy storage, etc. Section IV.—Directory of cement makers, etc.; showing the nearest and cheapest firms to buy from in any particular town. This information should be valuable to builders.

It is curious to note that while there are three firms doing well in Ireland, in Scotland little, if any, cement is made, not a single firm being mentioned. The writer remarks that the benefit of buying cement directly from the maker, and so saving a middle profit, is little understood by the small buyer, who will often buy his ton at a time from the middleman, whereas if a shed capable of holding four or five tons were put up, say 12 or 15 feet square, the saving effected in the price paid would soon pay for the shed.

BUILDING CONSTRUCTION. By Charles F. Mitchell and George A. Mitchell. Advanced Honours Course. Third Edition. London: B. T. Batsford, 95 High Holborn. 1901.

Than Messrs. Mitchell's work no better text-book on building construction has come under our notice. The subject matter is carefully dealt with and exceedingly well grouped, and excellently well suited to the requirements of students for the South Kensington examinations, or the Intermediate Examination of the R. I. B. A. The fact that it has already run to a third edition speaks well for its growing popularity. The present volume, compiled to assist students preparing for advanced and honours course, has been revised, amplified, and the number of illustrations largely increased. It undoubtedly contains in a less compass and for a smaller price most of the elements of much higher-priced works, and is at the same time more practical and up-to-date. The student gets the benefit of instruction in the latest American iron and steel construction, of Scotch practice in recent modern stonework, as well as sanitary science in general, while several of the more important building bye-laws are included. A special feature is the excellent model specifications given in most trades. The quality and admirable clearness of the illustrations entitle them to a special word of praise, while the fact that most of the details are fully figured is highly commendable, for the author who pretends to write a treatise on building construction for junior students, and neglects to figure the leading scantlings and dimensions of his illustrations, shows that he has failed to grasp one of the greatest essentials to lucid explanation. Of necessity, there are matters in the book capable of improvement. Owing to its comparatively modest size, in dealing with so vast a subject there are items too much condensed for our taste, while others might have been omitted to give space for more useful information; for instance, the examination papers are needless padding, because the student can easily obtain the examination papers if he wants to; and they occupy a good deal of space. The chapter on "Ventilation" is all too brief, and conveys but a very limited idea of the subject, although a few novel diagrams of inlets and outlets are given. The problem of a really satisfactory outlet vent is more or less slurred over. The same criticism applies to "Hot Water Apparatus." The wisdom of including such subjects in a book on General Building Construction is doubtful, for of necessity they have to be treated of "scrappily." Introducing such a

matter as the construction of domes in a comparatively elementary treatise, and dismissing it in a page or two, is not good. On the other hand, iron and steel work is well treated of, while concrete, brickwork, masonry, carpentry, and joinery are most admirably and exhaustively dealt with. The theory and practice of construction in relation thereto is wonderfully concisely described, and for this we have nothing but the highest praise, for after all these sections form the main body of building construction. As a technical school standard text, or for private study, we can heartily recommend Mitchell's "Building Construction."

CLASSIC ARCHITECTURE: A Series of Ten Plates illustrating typical examples of the Grecian and Roman Orders, with full details and a selection of Grecian and Roman Ornament. By Charles F. Mitchell and George A. Mitchell. London: B. T. Batsford, 95 High Holborn, W.C. 1901. Price, 6s.

Mr. Batsford has added one more to the long list of books useful to the student published by him. In the study of the "Orders" the student needs a work containing good examples, accurately and clearly drawn, and, at the same time, sold at a reasonable price to meet the wants of modest purses. For many years no such work was to be had—true, no better sources of study than Vignola, Chambers, and other similar works could be devised, but the prices of these too often caused the students' acquaintance with books of classic detail to be limited to a perusal of the office copy of Chambers. During more recent times several excellent works, at a moderate price, intended to fill this want, appeared, and of these one of the best is the book we review. The series of plates is well drawn and extremely clear, being drawn and shaded in line. The selection is limited but good. We have some doubts as to the wisdom of producing works intended for students' every-day use in the form of portfolios of loose plates; no doubt for class work this is the best form, but our experience is that people will not so freely lift down from their book-shelf a portfolio which has to be untied, referred to, and then tied up again. The plates are liable to get soiled and damaged, and constant reference can hardly be said to be encouraged; whereas a bound book is ever ready for easy and instant reference. However, with this exception (if it be a defect at all), we can heartily recommend Messrs. Mitchell's work to every student of architecture. In passing we may mention, as adding to the value of the examples given, that in all cases the columns are drawn to their full length and to a uniform scale, thus enabling the full value to be derived from examination and comparison.

ROADS—Their Construction and Maintenance, with special reference to road materials. By Allan Greenwell, A.M.I.C.E., and J. V. Eldon, B.Sc. (Lond.), F.G.S. London: D. Fouldriner, Builder Office, Catherine Street, W.C. 1901. Price, 5s.

SANITARY FITTINGS AND PLUMBING. By G. Lister Sutcliffe, A.R. I.B.A., etc., with 212 illustrations. London: D. Fouldriner, Builder Office, Catherine Street, W.C. 1901. Price, 5s.

The SANITARY INSPECTOR'S HANDBOOK. By Albert Taylor, Sanitary Inspector, City of Westminster, etc. Third edition, with illustrations. London: H. K. Lewis, 136 Gower Street, W.C. 1901.

The WATER SUPPLY AND SEWERAGE OF COUNTRY MANSIONS AND ESTATES. By E. Bailey Denton, M. Inst. C.E., etc., etc. London: E. and F. N. Spon, Ltd., 125 Strand. 1901.

GREAT MASTERS IN PAINTING AND SCULPTURE. Filippo di Ser Brunellesco. By Leader Scott. London: George Bell and Sons. 1901.

The CATHEDRAL CHURCH OF RIPON. By Cecil Hallet, M.A., Magdalen Coll., Oxon. 53 illustrations. London: George Bell and Sons. 1901.

OUR CORK LETTER.

(FROM OUR OWN CORRESPONDENT.)

Cork Exhibition, 1902.

The buildings for the forthcoming Exhibition are now making good progress. Contracts for about £7,200 have already been accepted for the Industrial Hall, comprising an area of 117,000 square feet, and also for a restaurant; both these have been placed in the hands of Mr. Wm. O'Connell, contractor, Cork, and are being carried out by the designs and under the superintendence of the City Engineer, who is acting as honorary Architect.

The other buildings, which are not yet in hands, are to comprise:—Concert Hall, capable of seating 5,000 people; Machinery Hall; and Demonstration Hall and Dairies about 150ft. by 50ft.; and also a hall for the Fine Arts and Archaeological Section, in the designing of which Mr. Arthur Hill, B.E., F.R.I.B.A., is assisting. There are also to be a switch-back railway and water-chute constructed on the opposite bank of the River Lee, which are to be connected with the main grounds of the Exhibition by means of a bridge.

The grounds, which cover about 30 acres, are to be tastefully laid out and planted; kiosks will also be placed at intervals.

At present there are about 200 workmen employed in the erection of the buildings; the floors throughout are to be constructed of wood, raised about 3ft. over the ground level on piles, as the grounds adjoin the river, and during winter are liable to be partially flooded. The buildings are to be of wood, covered with fibrous plaster, and the roofs of corrugated iron and glass carried on timber trusses.

The buildings will, when completed, cover an area of over 20,000 square yards; 30,000 square feet has been taken by the Department of Agriculture and Technical Instruction, for which they paid £1,500, and, in addition to this, they are subscribing £2,500 towards the project.

Subscriptions to the amount of £12,000 have already been promised, and £6,000 or £7,000 ought to be obtained for the spaces for exhibits. Of the applicants for space up to the present, 90 per cent. are Irish, so the native industries are sure to be well represented.

The contract for painting has been obtained by Messrs. Bible Brothers, Cork, for the sum of £2,100. An organ is to be constructed by Mr. T. Magahy, Cork, for £1,200.

The Executive Committee have been seriously considering the question of hotel accommodation, and ask for the co-operation of the hotel proprietors in order that they may be able to cope with the increased demand occasioned by visitors to the Exhibition.

Railways.

The Cork, Blackrock, and Passage Railway Co., having obtained their Bill for Extension of Borrowing Powers, have again started work on their line to Crosshaven, which will cost about £80,000 to complete, the original contractor, Mr. J. Best, undertaking to finish the work, and accepting portion of his claim against the company in debenture stock. The work is to be carried out under the guidance of Mr. Francis Fox, M.I.C.E., Westminster, S.W., and the company's engineer, Mr. Adams, C.E.

The Aerial Railway from Ballyphellig to Ballinahissig is now completed. It is four miles in length, and has been erected by Messrs. Roe and Bedlington, aerial engineers, London, for the Cork Brick and Tile Company, and the Cork and Bandon Railway Co., at a cost of £7,000, which sum is about one-third of the cost of a narrow gauge railway.

The steel cables are supported on high trestles, and carry large buckets, capable of holding about 3cwt. each. These, to the number of about 100, travel along the wire at the same time, and at the rate of four miles an hour. The motive power is at Ballinahissig Station. The cost of traction works out at about 2d. per ton per mile.

The construction of this line, which is a novelty in this district, is due to the enterprise of Mr. John Sisk, contractor, Cork, and the co-operation of Mr. Croker, manager of the Cork and Bandon Railway.

New Buildings.

The Ulster Bank, Limited, Waring-street, Belfast, have decided to open a branch in Cork, and for that purpose have taken premises in Patrick-street, which they are going to alter and improve to suit their requirements, and have placed themselves in the hands of Messrs. Robert Walker and Son, architects, Cork.

Messrs. Werner, Splidecker, and Perkins, Ltd., Regent-square, London, are just completing the heating of the Munster Arcade, Cork, with the low pressure hot water system, pipes varying from 2in. in diameter to 1½in. in diameter, and including 31 radiators. The system is worked in three circulations from one boiler and furnace, and works effectively at a pressure of about 12lbs. per square inch.

The same firm are putting in a heating installation at the Trinity Chapel, Charlotte Quay, Cork.

The Youghal Auxiliary Asylum is now in course of construction, the contract being obtained by Mr. S. Murphy, contractor, Cork. The engineers are now dealing with the question of heating and ventilation, and have under consideration tenders from several well-known firms for combined systems.

The work at the Cork General Post Office seems again to have been stopped, and has not yet reached the first floor level; probably the work is delayed by the non-arrival of the steel girders. The delay is a great inconvenience to the public, as the present temporary accommodation is very inadequate. Apart from this, it will probably improve the stability of the structure, as the ground under the building is none too good, and the foundations are formed of cement concrete 5ft. thick, stiffened with a network of steel girders. These foundations are now having a good opportunity of setting hard before the weight of the superstructure is placed on them.

OUR ILLUSTRATIONS.

Theatres in Germany are almost invariably either entirely maintained, or else subsidised, by the State, a system which unquestionably tends towards liberal ideas in building and decoration. We think a design by an English architect for a modern German theatre will not be lacking in interest to our readers.

This design was submitted by Mr. S. E. Spain, A.R.I.B.A., architect, in competition, and is modelled on "The Municipal Theatre at Amsterdam."

The great feature is in the excellent disposition of the whole, securing a division of risk, and is one of the safest plans known for the audience.

Fixed ladders are provided, which afford easy access to the roof, and also enable the firemen to enter the different tiers without using the staircases employed by the audience.

Other features are a separate smokeroom and exits arranged in connection with spacious staircases to each tier.

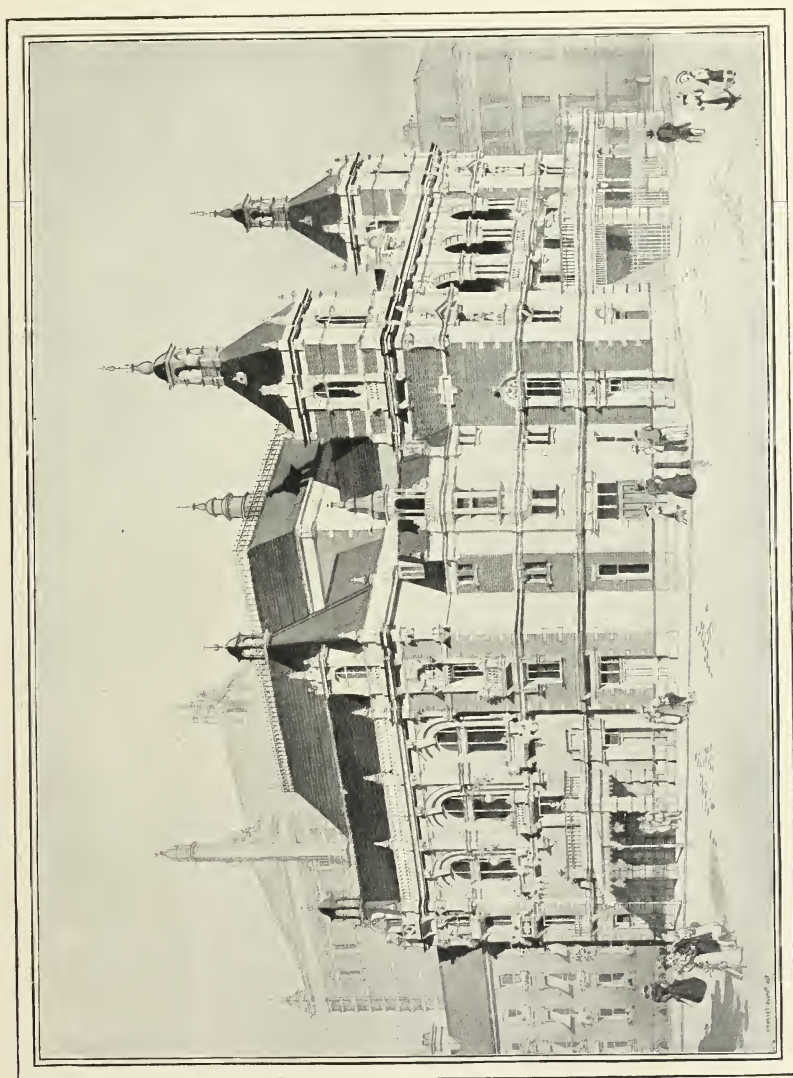
The design is in the modern Dutch style, and is to be erected in fire-resisting materials throughout.

The wash drawing, from which our illustration is taken, is by Mr. C. Henzell-Ascroft.

LIVERPOOL CATHEDRAL.

DESIGN TO BE LEFT OPEN.

At a meeting of the Executive Committee of the Liverpool Cathedral, it was resolved, on the motion of Lord Derby, seconded by Mr. R. Gladstone, that the preliminary competition for the design of the cathedral should be left open as regards style of architecture. It was further decided to extend until the 30th June next the time within which designs may be sent in; and that architects whose designs may be selected for the final competition be paid 300 guineas each, irrespective of whether their designs be successful or not. The decision to leave open the architectural style will undoubtedly be approved by the public, who have noted with some anxiety that the committee's original predilection in favour of the Gothic style has evoked much adverse criticism in technical circles.



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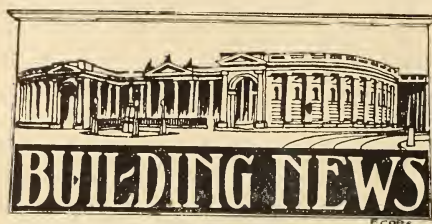


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MODÈLE DE FABRIQUE



Belfast.—THE PROPOSED NURSES' HOME.—With reference to the suggested nurses' home for the fever hospital, a Sub-Committee of the Board of Guardians had been appointed to consider the matter. That body selected a site somewhere near the gate, subject to the approval of Mr. Mackenzie, C.E. If the home were put near the hospital that building would be blanketed and darkened. The matter was referred back.—The Chairman said before they passed from the matter he might state that the guardians had approved of the principle of the erection of a nurses' home. They had the erection of a nurses' home, which meant a cost of nearly £11,000; the extension of the infirmary, at a cost of between £4,000 and £5,000; the erection of a laundry at a cost of £6,000; the addition to the fever hospital at a cost of £1,000; and four or five smaller jobs which no single clerk of works could supervise himself.

The work is proceeding very rapidly in connection with the erection of the Royal Victoria Hospital, and already the building presents a striking appearance. When completed it will be one of the finest institutions of the kind in the United Kingdom, and in designing the Royal Victoria Hospital, the possibility of superseding the pavilion arrangement of plan for hospitals was taken into consideration. The supposed defects of pavilion buildings of several storeys are the distances apart of the wards, the necessity for staircases and lifts, the excessive labour to the staff, and the difficulties of administration. The architects have endeavoured to show that it might be better to spread out the wards on one storey only, placed side by side, principally lighted by continuous lantern lights. It is constructed with red sand-faced brick, the dressings being in Giffnock stone. A feature of the roofing is that green Buttermere slates will be used. Such good progress has been made with the work of building that the administration wings and central block are already roofed, and principals have been erected for the roof of the eastern department. The seventeen large wards at the back have also been roofed, these, of course, including class rooms, operating rooms, chemical department, and bath-rooms. The administration block is ready for heating. The pathological department is roofed over, and the interior work is now being proceeded with as rapidly as possible. The ophthalmic ward is in the same advanced state, and fire proof floors have been laid in all the buildings. Even now the plasterers are at work, and are making steady progress. The cost per bed will not exceed £300, which is considered a very low figure for such a complete and up-to-date hospital. The aggregate cost of the institution will, it is expected, come up to close upon £100,000. Should His Majesty King Edward the Seventh visit Belfast next year, it is anticipated that he will lay the foundation stone of the building. As already stated, Messrs. McLaughlin and Harvey are the contractors; Messrs. William Henman and Thomas Cooper, of Birmingham, are the architects; while the quantity surveyors are Messrs. W. H. Stevens and Son, of Belfast.

The Committee of the General Assembly of the Presbyterian Church in Ireland, in charge of the erection of Assembly Buildings, at Fisherwick-place, Belfast, invite tenders. Schedule of Quantities can be obtained from Messrs. W. H. Stephens and Son, Donegall Square Buildings, Belfast, on Deposit of five guineas, which will be returned when a *bona-fide* tender has been sent in. Sealed and endorsed tenders, addressed to Rev. W. Todd Martin, D.D., D.Lit., to be lodged with Messrs. Young and Mackenzie, the architects, Scottish Provident Buildings, Belfast, on or before the 2nd of December.

THE NEW CITY HALL EXTRAS.—The minutes of this committee related the steps taken by the sub-committee in reference to the extra expenditure upon the new city hall, as recommended by the architect, Mr. A. B. Thomas, and stated that the following suggested expenditure had been adopted:—Internal decoration of dome and principal staircase, £16,932; sculpture, £2,000; increase in size and height of main entablature and balustrade, £2,000; increased height of dome, £2,500; plumbing, £1,500; additional joinery to public hall, £2,000; gallery to public hall, £3,000—£29,932. The total expenditure upon the hall would, therefore, be £104,315. In bringing forward his recommendation the committee felt it embraced all the improvements likely to be required, with the exception of the marble spandrels between the arches and ceiling of the hall, and hardwood in substitution for pine in some of the windows, involving an expenditure of about £1,000.

Castleisland.—Tenders are required for the erection of tower and spire at the R.C. Church, Castleisland, Co. Kerry. Bills of Quantities have been prepared, and can be seen at the offices of the Architect; from Messrs. J. M.D. Bermingham and Son, Leinster Chambers, 43 Dame-street, Dublin; or from the Ven. Archdeacon O'Leary, P.P., Castleisland. Tenders, addressed to the Ven. Archdeacon O'Leary, P.P., Castleisland, to be forwarded not later than Thursday, 14th November, 1901. Mr. D. J. Coakley, C.E., of 1 Charlotte-quay, Cork, is the architect.

Cork.—Tenders were received for the erection of a meeting hall in connection with the Y.M.C.A. Lodge, Sidney-place, in accordance with plans prepared by Messrs. W. H. Hill and Son, architects, on October 24th last.

The Committee of the Cork Young Ireland Society invite Designs for a National Monument, not to exceed £2,000, to be erected on the Grand Parade, to commemorate the movements of '98, 1803, '48, '67, for which they offer two prizes—First, £20; second, £10. Irish material to be used. Designs will be received up to November 21st. The designs received will be submitted for approval of a professional architect. Further particulars can be obtained at the Society Hall, or by letter to Mr. J. Crowley, chairman, or Mr. J. Ronayne, vice-chairman.

Dublin.—The Committee of Management of the Richmond Asylum invite tenders for supplying and erecting pitch pine benches, prie-dieu and chancel seats for the Catholic and Protestant Chapels, Portrane Asylum, Donabate, Co. Dublin, in accordance with the drawings, specification, and general conditions of contract prepared by Mr. G. C. Ashlin, R.H.A., architect, which can be seen at his office, No. 7 Dawson-street, or on application at the Richmond Asylum. The general conditions of contract contain the following clause—viz., "For skilled labour the Dublin rate of wages to be paid, including usual country allowances, and for unskilled labour not less than 15s. per week. In the event of the contractor not complying with these conditions, the Board reserve the power to terminate the contract at any time." Tenders should be delivered to the Resident Medical Superintendent, Richmond Asylum, Dublin, before 10th November, 1901. Mr. George Lennon is the Chief Clerk.

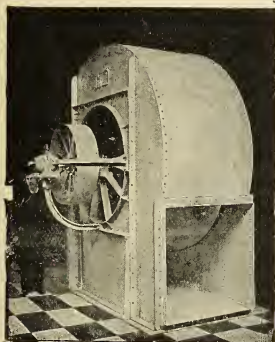
Glengariff.—Tenders are sought for additions to the Belle Vue Hotel, according to plans and specification, which may be inspected at the office of Mr. James F. McMullen, M.R.I.A.'s Architect, 30 South Mall, Cork.

Kilmallock.—The bell of the new church was consecrated last week. At the present time over £30,000 has been expended on the church. On the other side of the river are the beautiful ruins of the Dominican Abbey, which was founded in the thirteenth century, from which the window in the Lady Chapel of the new church is copied. A design of Mr. J. M. McCarthy, architect, Dublin, was adopted, and Mr. Walsh, Foynes, was declared contractor. About the year 1884 Mr. M. McCarthy died, and the services of Mr. Ashlin, Dublin, were secured. In the space of a few years there has been erected High Altar, Communion rail, mosaic pavement, at a cost of £1,000; two side altars, new sacristy, heating apparatus, tower, and spire, stained-glass window,

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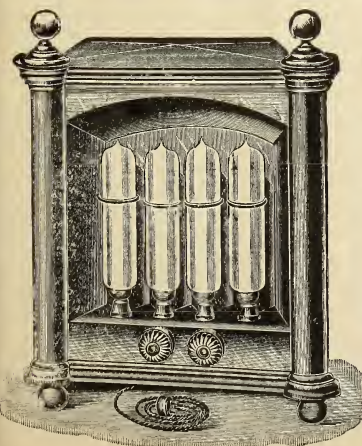
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a tessellated pavement in the nave and aisles, the Stations of the Cross, and the new bell. The spire cost something like £4,000, and the bell cost £500. The style of the church is Gothic, and is modelled on that of the Dominican Abbey; the walls are of limestone; the nave is divided from the aisles by shafts and rounded pillars of Cork red marble, polished, with moulded base, annulets, and carved capitals. The church is 130 feet long and 62 feet wide within the walls; the spire is about 200 feet high. The nave is entered by a double door in rounded jamb shafts, having moulded capitals and bases surmounted by a deeply-moulded arch and canopy. Over this an arcade of rounded jamb shafts, with moulded bases and carved capitals, and the arcade is surmounted by a Catherine-wheel window of elaborate design, 24 feet in diameter, the entire being contained within a recessed lofty arch. The bell weighs over 46 cwt., and was cast by Mr. Matthew Byrne, of Fountain Head Bell Foundry, James's-street, Dublin.

Limerick.—A new Presbyterian church has recently been dedicated in Limerick. The new church, which is one of the handsomest in the city, has been erected by Messrs. John Ryan and Sons, builders, from the plans of the architect, Mr. George C. Ashlin, R.H.A., Dublin, and it is in every respect a striking testimony of the zeal and devotion of those who have added such an edifice to the many splendid churches erected throughout the country. The cost is estimated at something like £6,000. Mr. D. W. Morris, of Dublin, was the surveyor.

MR. CARNEGIE'S OFFER.—Some time since the Mayor of Limerick, owing to the success which attended the application to Mr. Andrew Carnegie from the Waterford Corporation, wrote to that gentleman asking for a grant towards the Limerick Public Free Library. On Monday a reply was received from Mr. Carnegie, stating that if Limerick would contribute a yearly sum of £350 towards the support of the library, or, failing that, establish an endowment fund producing this amount annually, he would give £7,000 to provide a free library building.

The Committee of Management of the Limerick District Lunatic Asylum at their meeting to be held on the 13th November, 1901, will receive tenders from Building Contractors for alterations and additions to the Administration Block, comprising New Stores, Laundry, Kitchen, and Offices, in accordance with the drawings and specifications prepared by Messrs. Carroll and Batchelor, 86 Merrion-square, South. The drawings and specifications may be seen at the office of the architects, Dublin, or at Mr. O'Malley's, Glentworth-street, Limerick, from whom copy of Bill of Quantities may be obtained on payment of a fee of three guineas, which will be returned on receipt of a *bona-fide* tender. Wednesday, 13th November, 1901, is the last day. Terms and conditions of contract may be seen at the Office of William E. Counihan, Esq., Solicitor, Limerick.

Newry.—RE-BUILDING OF THE WORKHOUSE. Five tenders were received for the re-building of that portion of the workhouse which was destroyed by fire. The tenders were as follows:—T. McDonald, Dundalk, £6,785; David Mahood, Newry, £5,350; J. McKee, Dungannon, £4,981; Mr. McAleenan, Castlewelling, £4,778; and Alexander Wheelan, Newry, £4,749. It was decided to accept the lowest tender. Mr. Brown, of Newry, is the architect.

Omagh.—Re-opening services were conducted recently in the Second Presbyterian Church, which has been enlarged and repaired. The architect has done his work so effectively that it is difficult to tell which is new and which old!!! The enlargements comprise transepts (with 20 additional pews), minister's room, porches, heating chamber, etc. The heating scheme has been carried out by Messrs. Musgrave and Co. The contractor was Mr. William Allison.

The ceremony of laying the memorial stone of the new Presbyterian Church at Dervaghroy, in the Presbytery of Omagh, was performed last week.

Thurles.—The new Confraternity Hall is fast nearing completion. Mr. John Ormonde, Templemore, who got the contract at about £1,200, hopes to finish it by next month.

Waterford.—A new church is being erected in connection with the Convent of the Good Shepherd there. The chapel will comprise nuns' choir or nave, sanctuary and avant choir at the west end of nave, two side aisles (one for the accommodation of the penitents, and the other for the children of the Industrial School under the charge of the nuns), and a Magdalen's choir and large sacristies for priests and nuns. The chapel will be connected with the convent and schools by cloisters on each side. The dimensions of the chapel will be:—nave, 27ft. 6in. by 24ft. wide; patients' aisle and aisle for industrial school children, each 9ft. 6in. by 22ft. wide; sanctuary, 31ft. by 31ft.; Magdalen's choir, 25ft. by 18ft.; priests' sacristy, 20ft. 6in. by 10ft.; nuns' sacristy, 10ft. by 18ft. Messrs. John Hearn and Son, of Waterford, are the builders, and Mr. William Byrne, M.R.I.A., of 20 Suffolk-street, Dublin, is the architect. Mr. D. W. Morris, of 68 Harcourt-street, Dublin, being surveyor.

THE CARPENTERS' STRIKE.—The carpenters' strike at Limerick has entered on another phase. The negotiations for a settlement, with the High Sheriff as arbitrator, and which took place some few weeks back, having failed, the employers then threatened to import carpenters from England and Scotland. The arrival of non-society men was expected, and numbers of the men on strike assembled at the railway terminus awaiting the arrival of the Dublin train, but the imported carpenters did not travel by rail, as anticipated. The non-society carpenters, who were recruited from Scotch centres, arrived in port some hours later, having shipped from Glasgow in the Clyde steamer, "Fastnet." But few of the Limerick carpenters were aware of the fact, and the men were conveyed in a brake to the premises of Mr. Hayes, one of the builders who has refused to accede to the Limerick carpenters' demands. A strong force of police, under District-Inspector Hetreed and Head-Constable Feney, were on duty in the vicinity of the docks. The place at Reeves Path, where the non-society men are housed, is closely guarded by police patrols.

Felling of Timber.—Timber should be cut down when the sap is at rest, that is, in the middle of summer, or in the middle of winter. The latter is by far the more preferable. The ancients knew this as well as we do.

Velasquez.—(1590-1660) painted a Spanish admiral so true to life that King Felipe IV., entering the studio, thought the painting was the admiral, and began reproving the supposed officer for being in the studio wasting his time, when he ought to have been with the fleet. There have been numerous other instances in which the talent of the artist has deceived the spectator. Zeuxis (B.C. 400), a Grecian artist, painted some grapes so well that birds came and pecked at them, thinking them real grapes. This picture was said to have been painted in a contest of skill between Zeuxis and Parrhasios; the former artist, confident of success, said:—"Now, let Parrhasios draw aside his curtain, and show his production." "You have beheld it already," said Parrhasios, "and have mistaken it for real drapery." The prize was thereupon awarded to him, for Zeuxis had deceived the birds, but Parrhasios had deceived Zeuxis.

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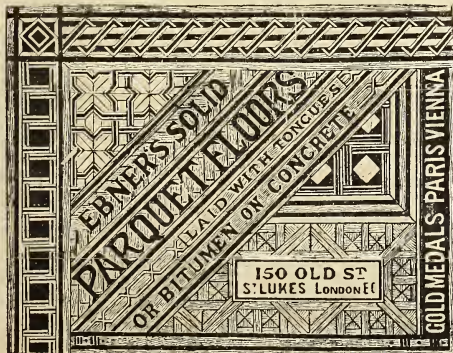
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Gold Medal, Melbourne, 1888. 1st Class Diploma, Adelaide, 1887.
Gold Medal, Society of Architects, 1886 and 1887. Gold Medal, Liverpool, 1880.
Silver Medal, Highest Award, Inventions Exhibition, London, 1885.
Gold Medal, Health Exhibition, London, 1884. 1st diploma, Delft, 1885.

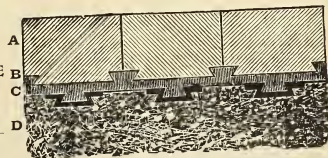
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Armagh.—**THE SEWERAGE BLUNDERS.**—The city rate-payers who will be taxed so heavily for the sewerage scheme, will read with interest the account of Monday's and Tuesday's proceedings. The cool substitution of an 18-inch main instead of the 24-inch authorised by the plans, is now admitted, and the first question is to remedy the evil caused. The natural answer would be to re-lay the pipe as it should have been laid at first, but Mr. Kaye Parry, whose professional status is undoubted, considers that the erection of overflows will meet any great flow of storm-water into the pipes. Mr. Parry may be right; but to the lay mind it would seem queer that if these overflows were considered the necessary adjuncts to a 24-inch pipe, how is it that they will be sufficient with only an 18-inch one? The discovery is an explanation of the flooding on the Mall, for, as Mr. Parry said, it was an attempt to put a quart into a pint pot, and naturally, when the sewerage could not discharge itself through the pipes in Lyle's Meadow, they flooded back on the Mall. Who is to blame for the blunder, was not stated; but, as Mr. Peddie is the engineer of the scheme, and, though called upon, did not say a word in explanation or denial, the only interpretation is that he must bear the responsibility. We understand, also, that at a committee meeting he admitted he allowed the 18-inch pipes to go down. A series of blunders have been perpetrated since the works began, and Mr. Peddie cannot certainly congratulate himself upon the way matters have been going on. To the people of Armagh the question will be—Who is to pay for the blunders? Mr. Peddie's attention was called to the remonstrances of the inhabitants of Charlemont-place being flooded, but he paid no attention to the letter, or even to the solicitor's subsequent letter, and it was only after legal proceedings had been taken that an attempt—and, it seems now, a useless attempt—was made to effect a remedy, for the substitution of an 18-inch pipe for the authorised 24-inch one was the cause of the flooding, and not the taking in of water from the Pound river. At previous meetings some of the Council held that Mr. Peddie should pay for other blunders, which he admitted, and we now think that if he is at fault in the alteration of the pipes, then he, and not the citizens, should bear the cost of the litigation and the cost of the works proposed by Mr. Kaye Parry. Since the above was written we learn Mr. Peddie has agreed to defray all the cost the Council has been put to with reference to the flooding. Mr. Peddie has been wisely instructed.—*Armagh Chronicle.*

Belfast.—**PROPOSED BRIDGE OVER THE LAGAN.**—(ORMEAU RATEPAYERS SUPPORT THE PROJECT.)—In furtherance of the project of constructing a bridge across the Lagan at some convenient point between the Albert Bridge and the Ormeau Bridge, a meeting of the ratepayers of Ormeau Ward was held. The scheme proposed to be carried into effect in connection with the Water Commissioners would involve an outlay of £8,000 or £10,000, which capitalised would mean an annual payment of £450 per annum, and the ratepayers would not grudge this sum when they looked at the immense benefit they would reap opposite it.

Boyle.—The Rural Council of Boyle is showing a commendable example of business, which might be followed with advantage by some larger places. It has just brought to a successful issue the lighting of the town by electricity, and has now entrusted Mr. J. H. H. Swiney, M.Inst.C.E., of Belfast, with the preparation of plans for a water supply. The Provisional Order for these works was obtained last session, and the contract plans are now well on towards com-

pletion. The water is to be drawn from springs nearly four miles from the town, and delivered by gravitation to a reservoir just above it, situated at such an elevation as will command the highest district supplied. The springs issue from the limestone rock of the country, and being above all sources of contamination, will give a bright, pure, and potable water. It is a matter of congratulation that the supply can be obtained by gravitation, as the cost of pumping, which was contemplated before Mr. Swiney was called in, would, with the initial expenditure, have made the work prohibitive.

Castleblaney.—Mr. Keelaghan has been elected Town Surveyor.

Clones.—At a special meeting of the Urban District Council, Clones, held on the 22nd ult., to consider proposals for the new sewerage works, the tender of Mr. William M'Mahon, contractor, Clones, amounting to £3,186, was accepted. Mr. J. H. H. Swiney, M.Inst.C.E., of Belfast, is the engineer of the scheme.

Dundalk.—It is said that another electrical engineer has been making inquiries with a view to taking over the electric lighting of Dundalk.

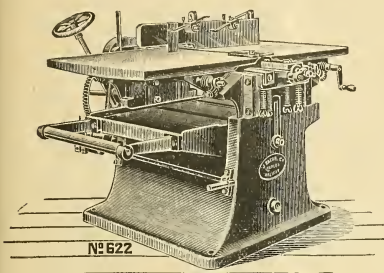
Fermoy.—**WATER WORKS.**—Mr. Lane proceeded to read the report, which, briefly stated, showed that the present water supply was insufficient, that the storage capacity of the present reservoir could not be safely increased, as either deepening the reservoir or rising the bank would be dangerous. He had examined Cooliny source for a supplemental supply, which he considered would be amply sufficient for all purposes, the estimated cost being £7,000. In conclusion, he paid a warm tribute to the help he had received from Mr. P. J. Lane, Town Clerk, and Mr. T. O'Mahony, Engineer.—Mr. Furlong proposed that the new scheme be adopted, as estimated, up to £7,000.

Howth.—The report of Mr. O'Neill, Clerk of the Rural District Council, relative to Howth, states that the present valuation of the Howth electoral division is £15,027, and the valuation of the whole rural district £78,805. In a scheme for a loan of £10,000, which was considered the least it would cost to procure an adequate pure water supply and drainage, the amount of repayment would be (if the same terms were allowed by the Board of Works as were granted for Blackhorse-lane), £401 13s. 4d. annual for 30 years. This annual charge, if extended over the whole rural district, would be exactly 1½d. in the pound on the valuation, and if confined to Howth electoral division it would be 8d.

Mitchelstown.—**ELECTRIC LIGHT SCHEME.**—A public meeting was held in the Town Hall, Mitchelstown, for the purpose of considering a proposal to revive the Mitchelstown electric light scheme. In 1896 a Bill was carried through Parliament, at much expense, for the purpose of giving the Mitchelstown Board of Guardians, as Local Sanitary Authority, powers to illuminate the town with electric light. After Parliamentary powers had been obtained, the Board of Trade held a local inquiry into the merits of the project, with the result that the Provisional Order was withheld, on the grounds that the water power of the Gradogue stream was insufficient. It is now proposed to go on with the scheme on a much more extensive basis, so that public and domestic electric lighting will be supplied, and for this purpose the promoters propose to utilise the Funcheon river.

Mullingar.—At a recent meeting of the Mullingar District Council there was a long and heated discussion about a sewer. So heated, indeed, that one of the members, a Mr. Leecogue, left the Council Chamber, and in passing out shouted to his colleagues, "To blazes with the whole damned lot of you."

Omagh.—Last Saturday in the Boardroom of the workhouse, Omagh, the architect, Mr. J. L. Donnelly, submitted plans, specifications, and estimates for the Gortin waterworks. The estimated expenditure was £370.—Mr. Clarke proposed that the scheme be approved of. The motion was passed. A discussion took place as to what rents should be fixed on the labourers' cottages. It was decided that the cottages all over the district, except Omagh, should pay 1s. 3d a week, and those in the Omagh district 1s. 6d.



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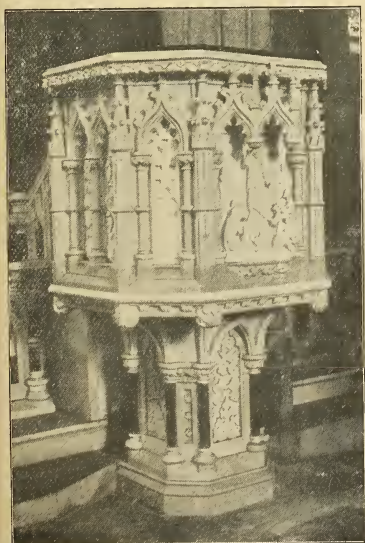
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ARCHITECTURAL ASSOCIATION OF IRELAND.



An exhibition of drawings prepared by members of the Association has recently been held in the rooms of the Royal Institute of the Architects of Ireland, by the kind permission of the President and Council of that body. The drawings consisted of the competitive works of members for the various prizes offered during the past session, and were a remarkably creditable collection, and indicate a very decided improvement in the skill of the young architects of Dublin, both as regards design and draughtsmanship. Prominent among the drawings were nine large sheets of accurately measured drawings of St. Patrick's Cathedral, Dublin, splendidly executed by Mr. T. A. Rockett, who well earned the prize—the Association travelling studentship—in competition for which they were prepared. Another extremely good set of measured drawings were shown of Mellifont Abbey, by Mr. A. C. Scott, of Drogheda; seven sets of drawings were shown which had been prepared in competition for the prize offered by the Royal Institute of the Architects of Ireland for the best design for a technical school. The prize drawings, by Mr. Charles Powell, were executed in black, and showed a good honest plan. Three sketches of the Campanile in the Quadrangle at Trinity College were on view, one by Mr. L. O'Callaghan, taking the Beckett Prize. The class drawings, which were exhibited demonstrated the fact that real hard work is done by the members, and that the object for which the Architectural Association of Ireland was founded is being very well held in view, that is, of providing a school wherein the younger members of the profession in Ireland may acquire knowledge of design and draughtsmanship. As an educational body for young architects this Association has become firmly established.

On Tuesday, 5th inst., Mr. W. Johnston-Roberts, Solicitor, read a very interesting paper, illustrated by diagrams, and entitled, "Some Law Points for Architects." The lecturer gave a mass of useful information dealing with the rights and liabilities of builders and the laws of Public Health. We hope to publish this paper in our next issue.

CORRESPONDENCE.

WESTMINSTER HALL ROOF.

TO THE EDITOR OF THE "IRISH BUILDER."
SIR,—The interesting statement is made in the current issue of THE IRISH BUILDER that this celebrated roof is constructed of Irish-grown oak. Is there good authority for this assumption? I recollect very well, indeed, that forty years ago, nine people out of ten, who considered themselves any sort of an authority upon timber, roundly asserted this famous roof was made of chestnut, just as to this day some mis-informed folk declare roundly is also the splendid 14th century roof of the Cloth Hall at Ypres (Belgium).

I believe, as a matter of absolute fact, I was the first, or one of the first, to make it clear that neither of these wonderful roofs is chestnut at all, but oak. Still, during my investigations, the fact of the material for the forming coming originally from Ireland did not crop up. I am sure all readers of THE IRISH BUILDER will be grateful if some one who can lay hands upon particulars touching upon the subject will make them public through the pleasant medium of your valued columns.—Yours obediently,

HARRY HEMS.

Exeter, 25th October, 1901.

LAW CASES.

LAYING WOOD BLOCK FLOORING.

GEARY, WALKER, AND CO., v. HODGSON.

In the London Lord Mayor's Court, on October 9th, before Sir Forest Fulton, K.C., Recorder, and a common jury, an action was brought by Messrs. Geary, Walker, and Co., wood flooring contractors, against Mr. James Hodgson, builder, of Carlisle, to recover £40 8s. 8s., the balance of an account due for materials supplied and work done. The plaintiffs were approached by the defendant in the early part of last year with regard to laying parquet flooring at a small fever hospital at Carlisle, for the erection of which the defendant was the contractor. A quotation to lay 250 superficial yards at 6s. per yard was accepted by the defendant, and materials were sent down. The work was commenced in February last. While it was in progress the defendant ordered, and was supplied with, certain "cove" skirting, the labour in connection with which was to be supplied by the defendant. Some dispute occurred as to which part of the work ought to be done first, and, in consequence, the plaintiffs alleged, the laying of the flooring was delayed. At the expiration of three weeks the plaintiffs applied for a payment of £50, being 80 per cent. of the cost of the materials supplied, and work done up to that time. The defendant declined to pay, on the ground that payment was not due until the whole of the work had been approved by the architect. In consequence, the work was stopped. The full amount of the contract was £75, and skirting was supplied, bringing up the amount to £91 11s. 3d. Credit was given for £5 13s. 4d. for unlaidd flooring and waste, and for £45 9s. paid, reducing the amount to £46 8s. 8d., the sum claimed. The defendant: answer to the claim was that the work was improperly done, and that he had to relay the whole of it. He paid £17 7s. 11d. into court, and, as to the balance, said the plaintiffs had contracted to lay 250 yards of flooring to the satisfaction of his (defendant's) architects, but, in fact, only laid 219½ yards, and the architects refused to give their certificate for the same. The workmen were withdrawn, and the defendant had to make good the defective work. He counter-claimed for £23 os. 9d., as damages for breach of contract. Witnesses were called on both sides. The defendant's architect, Mr. Oliver, said the flooring laid by the plaintiffs' workmen was defective in places, and badly cleaned off. In the result the jury found a verdict for the plaintiffs for the amount of their claim, and for the defendant on the counter-claim for £22 os. 9d.

CORPORATION BUILDING BYE-LAWS.

IMPORTANT DECISION.

Recently, in the Northern Police Court, Dublin, the case of the Corporation v. Mr. Daniel Daly, Hillsborough, Drumcondra, was heard before Mr. Wall, K.C. It was to enforce the Corporation bye-laws requiring an intercepting trap to be placed on the drain of every house. In this case five houses had their drains discharging into a sewer* running through private ground at the rear of the houses. This sewer was provided with a Buchan trap at the point near the main sewer. The bye-laws require that each drain from the last house should have an intercepting trap. It was contended for the defence that this was unnecessary. The City Architect (Mr. McCarthy) and the Medical Officer of Health (Sir Charles Cameron) attended on behalf of the Corporation, and it was given in evidence that it was according to the canons of sanitary science that each drain should have its own intercepting trap. The reasons for this were given at considerable length. The magistrate decided that the bye-law should be complied with, and ordered the work to be carried out within a month. Mr. Ignatius J. Rice appeared for the Corporation, and Mr. Brady for the defendant.

* This fact constitutes the "Sewer" referred to a Municipal charge, notwithstanding that it is situate in private ground.—Ed.

THE IRISH BUILDER

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No. 1,005—Vol. XLIII.

HEAD OFFICE

NOVEMBER 21, 1901.

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TOPICAL TOUCHES.

Messrs J. and R. Thompson, of Belfast, the well-known builders, have established building works at Fairview, and are, therefore, in a position to execute orders.

Mr William Carroll, a well-known builder and contractor, died suddenly at his residence, 4 Adelaide Road, Kingstown. For years deceased suffered more or less from rheumatic gout, but he attended to his business up to a week ago, when paralysis of the right leg set in.

The American Consul-General Hughes of Coburg reports that fibrolem, a new artificial leather invented by a Frenchman, is made from scraps of skins and hide cut small, rendered pulpy in an alkaline solution, and then formed into sheets resembling paper, which are pressed to expel the moisture. Fibrolem is used for decorations and "wall-paper."

Mr. Charles Hawksley, the newly-elected President of the Institution of Civil Engineers, recently delivered his inaugural address before a large company of members. He dealt with various branches of work embraced by civil engineering, showing what great advances had been made in every department during the last century. Referring to waterworks, Mr. Hawksley said he disagreed from those who said all waterworks undertakings should be in the hands of the public authorities. His experience led him to think otherwise. The municipalisation of public works was a movement to be viewed with anxiety and regret as it discouraged private enterprise.

The towering campanile of the new Cathedral at Westminster, though still unfinished, is already a conspicuous object in South-West London. Its character as a point of vantage has been quickly recognised by the War Office (says the *Tablet*), to which must be awarded the honour of having first put it to a public use. Cardinal Vaughan was requested to allow a party of signallers to occupy the topmost scaffolding on Saturday last, the day of the home-coming of the Duke and Duchess of Cornwall. Permission being given, the men were duly hoisted up in the masons' lift, and from their point of observation on the tower signalled to the War Office and Marlborough House the exact moment of the arrival of the Royal travellers at Victoria station.

Mr. R. Catterson Smith, whose name has of late attracted attention in the Press, especially in connection with the sale at Messrs Sotheby's of portion of the library of the late Mr. F. S. Ellis, including a set of Mr. W. Morris's Kelmscott Press publications, and the original drawings by Mr Catterson Smith for the Burne Jones edition of Chaucer, which latter were purchased by Mr. Quaritch for no less a sum than £800, is the second surviving son of the late President of the Royal Hibernian Academy, and brother of the present secretary of that institution, Mr. T. Catterson Smith, R.H.A., of Stephen's Green. Mr. Smith commenced life as a sculptor, being a pupil of the late J. H. Foley, R.A., but subsequently gave his attention to painting, and finally devoted himself to artistic metal work, in which branch he was so eminently successful as to be invited by the Corporation of Birmingham to accept the post of director of the school established by them this year in their city with the object of placing English art metal work foremost in Europe for excellence of design.

Mr. Sylvanus Trevail, F.R.I.B.A., J.P., President of the Society of Architects, has been returned at the head of the poll, and for the seventh time, by the electors of the Eastern Ward of the city of Turo.

On the 24th inst. Mr. William Graham, the well-known timber importer, held a big auction of wood goods at Beresford-place. Mr. George Bell acted as broker, and there was a big attendance. Luncheon was served to those who were present.

H.M.S. "Leviathan," first-class cruiser, 14,150 tons, 30,000 i.h.p., recently launched from the Clydebank shipyard of Messrs. John Brown and Co., is to have non-flammable wood used throughout for the constructional woodwork and fittings.

The admirable and instructive paper read before the R.I.B.A. last session by Mr. T. J. Bailey, architect to the School Board for London, on "The Planning and Construction of Board Schools," has been reprinted in pamphlet form. It is published at half-a-crown.

The Rector of the Irish College in Paris has just issued his long-promised history of that famous institution in the Rue des Irlandais, founded in 1578. It appears there are no fewer than seven Irish Catholic seminaries in France, including those of Bordeaux, Toulouse, Nantes, Poitiers, Douai, and Lille. The work is dedicated to Cardinal Logue.

We hear that Mr. Howard Pentland, R.H.A. Chief Surveyor, Office of Public Works, in designing the new Dublin Bride-well, made very extensive use of the expanded metal throughout that building. It was also used extensively in a Meeting hall now being erected in Dublin.

There is an historic spot in Lower Baggot-street, near the corner of Fitzwilliam-street, where a fruit and vegetable shop has recently been opened. It was here the old city gallows stood in far-off ancient days, and thither the condemned were conveyed up the rising ground now known as Mount-street, and which caused this highway towards Mess-pil to be known as Gallows' Mount. A quarry stood opposite, as can be perceived from the hollow there to this day, and many complaints were made in the papers of a century back with regard to some accidents that happened there, and, apart from that, it must have been a dangerous road to go by, as there are several cases recorded of robberies by highwaymen on the Gallows'-road, which was a very lonely district a hundred years ago.

The Green Book of the Architectural Association of Ireland—if weight and bulk of contents are to be taken as criterions of success—it must be allowed, shows marked progress. The booklet is neat and attractive, and the record of work disclosed by the annual report is, on the whole, distinctly encouraging. True, the ingrained apathy of architectural pupils in Dublin has not been overcome. It is recorded that the interest evinced in the classes at the beginning is not maintained. Every effort to do good has been made by the committee, and the secretaries did not spare themselves. The prizes offered were extremely liberal, and the programme of study unambitious, though well thought out. We hope to see, during the coming session, even more marked indications of progress, such as would warrant one in saying that the A.A.I. is doing, and will do, real and lasting good in the cause of architectural education.

*LAW POINTS FOR ARCHITECTS AND BUILDERS.

BY W. JOHNSTON ROBERTS, Solicitor.

MR. CHAIRMAN AND GENTLEMEN,—

I much appreciate the honour you have conferred on me by your request to read a paper before your Association this evening. The subject I have chosen is a very large one, and I have experienced considerable difficulty in selecting the points I now bring under your notice from out of the huge mass of legal decisions affecting your profession. I have tried to avoid the better known propositions, and have confined myself to those which, though less known, are equally important. I thought it would be more satisfactory to select a few points and discuss them with a fair amount of detail than to skim over a much larger area superficially. I have, moreover, tried to select such points as would be most likely to arise in a good general practice, and which are of frequent application, than more obscure ones—however interesting—which rarely turn up. As the provisions of the various Sanitary Acts as to drainage, privies, etc., form a fertile source of litigation, I intend to devote the major portion of my paper this evening to the consideration of that subject.

Before doing so, however, I intend to say a few words about another matter which very frequently demands your consideration. That is, in the event of the demolition of a building, what are your rights and duties in respect to adjoining owners. These I will now shortly consider.

The Demolition of a Building.—The Shoring of Party Walls.

When the building is detached no question of importance is likely to arise save as to light and air, the law of which rather appertains to the new building; but if the building forms part of a terrace, and supports, or is supported by, buildings on one or both sides, a most important question as to your duty in respect to the owners of the premises, the lateral support of which you have withdrawn, then arises. The rights and liabilities of the parties under these circumstances I now propose to consider. In a case which was decided in Dublin some years ago, these rights and liabilities were fully considered and judicially decided upon. The case to which I refer is "*Kempton v. Butler*." The plaintiff was owner of the house No. 82 Grafton street. Between which said house and No. 83 (the house adjoining) was a certain party wall which was part and parcel of both houses, and upon which the beams and joists of the plaintiff's house rested, and by which said party wall the other walls of the plaintiff's house were supported. Plaintiff's house and said party wall had been built more than 40 years prior to the acts complained of. It was further alleged that defendant knew that it was a party wall. Now, the acts complained of were that the defendant, who was a builder, had, in taking down the house No. 82 (for the owner) neglected properly to stay and prop up the party wall, by reason of which neglect the said party wall fell down, and with it plaintiff's house, which was utterly destroyed.

Lord Chief Justice Monahan, delivering the judgment of the court, cited the case of "*Peyton v. The Mayor of London*," in which it was decided that where two houses adjoined and where they had in fact a party wall between them, there was no such obligation cast by the law of England upon the owner of either of the houses as was sought to be thrown on the defendant there, and that either party could take down his own house provided he was guilty of no negligence in so doing; moreover, if it became necessary to shore up the adjoining house, that the duty was cast upon the owner of the adjoining house, and not on the owner of the house to be taken down. The learned judge also stated "that the law says that neither party has a right to the support of the adjoining house." A custom (as was alleged) to the contrary would be unreasonable, because it would throw indirectly upon the owner of the house taken down the expense of shoring up the adjoining house, for, if the builder be employed for the purpose of taking down the house to re-

build it, he will not do so unless he be paid by the person employing him the expense of shoring up the adjoining one. Again, in the same case, Justice Christian stated, that if two persons build a wall at their joint expense, on their boundary line with the intention of each adding buildings on his own side, I can understand that each gives the natural support of his land, and that he cannot be allowed to dig in his own soil so near as to weaken the foundation of the common wall. But he is not bound to supply adventitious supports; and if he does build against the wall, and the new house does come to afford it certain additional support, he may, notwithstanding, take down the house when he pleases; and if he leaves the party wall no worse than when he built the house, the neighbour has no right to complain. Nor can the length of time during which the house may have stood make any difference; for the existence of the support is a thing uncertain and invisible—it may be the house that supports the party wall, or the party wall that supports the house; and, therefore, no presumption of grant arises from continuance. This rule, apparently, only applies where the houses were originally built by different proprietors, and in which there is, or was, no community of interest save the mere common ownership of the partition wall, but if all the houses were originally built by the same person, and they mutually supported each other, and that the owner, as owner of all, was benefited by that mutual support, then if he alienated one he granted along with it a share in that benefit—a benefit derived not only from the partition wall, but also from the whole house, and he retained a similar right himself for the house he kept. This has been decided in "*Richards v. Rose*." Now, gentlemen, having given you a rather full epitome of the case, I think it would be well to consider what it decided, and its application.

Points Settled.

The points decided by this case are, shortly, these:—

- (1.)—That there is no custom in the Dublin building trade whereby a builder would be compelled to shore up a house adjoining that which he may be demolishing.
- (2.)—If such a custom did exist it would be unreasonable and, therefore, illegal.
- (3.)—The owner of the house being demolished is not liable either to shore up premises adjoining those which he is demolishing, or to damages at the suit of an adjoining owner whose house fell down by reason of same not being shored up.
- (4.)—That the fact that the wall which fell was a party wall in no way interferes with these conclusions.

Negligence—Interference.

Provided always that there was no negligence in the removal, and that the foundation of the party wall was not interfered with, the conclusions arrived at apply equally well whether the house has been standing a hundred days or a hundred years. There is, however, a most important limitation to the application of the above dicta, which is that they only apply in the case where there never has been any other community of interest between the owner of the demolished house and the owner of the adjoining premises other than a community of interest in the ownership of the party wall. If the house being demolished and the adjoining premises were all originally built by the one person, and that he, as such owner, was benefited by such mutual support, then, as before stated, if he sold or otherwise disposed of one of the houses, he disposed of a share in the benefit of the support which the house gave the party wall, and reserved a similar benefit to himself, in which case it would be the duty of the owner to see that during the process of demolition the adjoining premises received the support to which they were entitled.

Support must be given.

To put the thing in a nutshell. Where the premises being demolished and the adjoining premises were built by one and the same person, the owner of the house being demolished must give the necessary support to the adjoining premises. In any other case, granting him to be guilty of no negligence, and not to have disturbed the foundations of the partition wall, he need take no trouble as to shoring up

*A paper read before the Architectural Association of Ireland.

adjoining premises save for his own safety. It would be well in all cases, however, to give notice to the adjoining owners of his intention to demolish, so that they can take such precautions as may seem fit. The Dublin Corporation Act (1890), specifies the time and mode of notice required for premises to which it is applicable. I fear I have been a little prolix in my explanation, but as the liabilities of the parties very often depend upon what at first sight may seem trivialities, I have sacrificed conciseness to clearness. I trust each of you will be in a position to determine for yourselves under what circumstances adjoining premises must be shored, and by whom, and to fix the liability in the event of accident.

The Corporation Act.

I have mentioned the Dublin Corporation Act incidentally. Most people believe that under it and the Sanitary Acts the Corporation have almost unlimited powers. I may admit that that was my own impression until I investigated it for myself. I then found that, with a very few exceptions, such is not the case. I state this specifically, as some think that the case I have been discussing has been materially altered or affected by that Act.

Points in the Act.

The Dublin Corporation Act of 1890 contains a few points which it might be well to consider. There are a number of enactments and regulations concerning party walls, but, on careful reading, it will be seen that they only define more clearly and amplify the rights of the building owner and the adjoining owner over the party wall, and in no way touch upon his duty to shore up the party wall or inflict a penalty for not doing so. They refer solely to the rights of the parties in respect to the wall itself, and in certain cases you will see that awards by way of compensation are to be given to or by the building owner in the event of injury done to it by his act. The injuries to which this refers are fairly well set out, and consist chiefly of cutting away chimney breasts, footings, jamb, etc. No reference whatsoever is made to injury caused by the building owner by the withdrawal of the support of the house being demolished.

Sanitary Laws.

I will now proceed to another branch of my subject. We will suppose that the existing building has been successfully demolished, and that the question of shoring or propping has been satisfactorily solved. The next important question which would then present itself to us is the question of the sewerage and the sanitary accommodation. The law on these subjects naturally resolves itself into two parts. One, the law as applicable to newly-erected or rebuilt houses; the other, the law as applicable to houses already built. Let us consider the newly-built or rebuilt houses first. We all know what a newly-built house is, but what exactly constitutes a rebuilt house is not so clear. A house is considered to have been rebuilt within the meaning of the Sanitary Acts if it is a building which has been pulled down to or below the ground floor, or any frame building of which only the frame work is left down to the ground floor, or the conversion into a dwellinghouse of any building not originally constructed for human habitation, or the conversion into more than one dwellinghouse of a building constructed as one dwellinghouse only, shall best be considered the erection of a new building, and whenever any old building has been taken down to the extent of one-half of such building, such half to be measured in cubic feet, the rebuilding thereof to be considered a new building for the purposes of the Act (P. H. Ir. 178, sec. 43). Therefore, for the purposes of this part of the Public Health Act new houses and houses which have been extensively rebuilt are in the same category. Such being the case, let us consider the provisions of the P. H. Act affecting such structures. By section 44 it is enacted that it shall not be lawful to newly erect or rebuild as above defined—any building without sufficient water closets, earth closet, or privy accommodation, and an ashpit covered with proper doors and coverings. I do not believe I am wrong in stating that almost every word of this section has given rise to important litigation. What is a building? What is sufficient water-closet, earth closet, or privy accommodation? Who is judge of its sufficiency? Is there any appeal from his decision? Has the owner of the house being erected the option of

selecting the form of sanitary convenience he proposes to adopt, or must he follow the dictates of the judge of the sufficiency? All these questions are of the utmost importance, and I will now consider them separately. Before doing so it might be well to consider what is a building within the meaning of the Act. As no definition of this word is given in the Act it might be well to consider a few kinds of structures which have been held to be buildings. I shall merely give a few of the principal decisions affecting this point. In England a dissenting chapel has been held to be a house capable of human habitation, but a church consecrated by law to ecclesiastical purposes for ever is not. For the purpose of the Nuisance Sections of the P. H. Act a ship is a house (sec. 126).

What is a Building? Structures.

However, temporary structures of brick and mortar used for the storage of tools during the erection of some cottages, were held not to be buildings within the meaning of a bye-law which required plans of intended structures to be deposited, and the bye-law was declared bad. Arches under a roadway have, in certain cases, been held to be buildings.

Now, as to the sufficiency of the sanitary accommodation to be provided. Under the section (44) which applies to newly-built and rebuilt houses, it has been held that the justices represented in the Dublin Metropolitan Police District (the Police Magistrates) are the proper judges; an appeal lies from their decision to the Court of Quarter Sessions (in Dublin Quarter Session District to the Recorder), from thence to the King's Bench on special case, then to the Court of Appeal, and ultimately, if so desired, to the House of Lords. An appeal also lies to the Local Government Board. In this very important question of sufficiency, at least the Sanitary Authorities will be found to be far from being absolute masters of the situation. There remains yet the important question as to the form of sanitary convenience to be adopted. This I will discuss later on, and will now consider our rights and the law respecting already existing dwellings with regard to the questions already discussed. In the first place the judge of the sufficiency of the existing sanitary accommodation under this section 9 (sec. 43) is not the justice but the Sanitary Authorities. They are the sole judges subject to appeal. The only appeal for practical purposes in proceedings under this section is to the Local Government Board. Proceedings are, however, very rarely taken in this country under section 43 of the P. H. Act in Ireland, because the justice is not empowered to inflict any penalty for non-compliance with his order as he can do under section (4). What the Sanitary Authorities have to do in the event of non-compliance with an order under this section is to do the work themselves and sue the owner for the cost as private improvement expenses. As this necessitates an immediate expenditure, to be followed by a problematic return, and possibly by a loss to the Sanitary Authority in the event of the owner's appeal to the Local Government Board being successful, it is rarely resorted to. The Local Government Board's opinion on the sufficiency of the sanitary accommodation cannot be had until the Sanitary Authorities have expended their money. Therefore, questions as to the rectification or insufficiency of existing dwellings are generally determined by proceedings under section 107 (the Nuisance Section). In this event the justice again becomes the judge of the sufficiency of the existing arrangements. He has absolute power and discretion, with or without the approval of the Sanitary Authorities, to direct whatever is necessary to abate the nuisance, and, in the words of the learned judge in "Whitaker v. Derby Union Sanitary Authorities," "the justices are absolutely unfettered in their judgment." We now come to consider an important limitation on the discretion of the justices, which is the right of the owner to select the form of sanitary convenience he will adopt. Popular opinion has it (at least in the City of Dublin) that if the Sanitary Authority insist upon having a water closet, a water closet they must have. This is entirely wrong; the owner can, if he so desires, put in privies in a new building in Merriem-square or Grafton-street, and, according to the highest legal authorities, there is no law in the land to prevent him so doing.

(CONTINUED.)

CONSTRUCTION MATERIAL.

In an interesting article which recently appeared in the *Morning Post*, the author, Mr. W. E. Martin, has some interesting observations to offer on the various descriptions of material used in building. Of course, the article is written for outsiders; still, there is in it much which is instructive:—

Concrete

One of the first constructive materials used in a building is concrete. Until the invention of Portland cement it was practically unknown. Now it is extensively used in foundations and floors, but for walls it has not made that progress marked out for it forty years ago. In this country it may be said that concrete has not yet been scientifically tested, though in Germany it is used for railway bridges across openings thirty feet wide, and a skew bridge of concrete has recently been erected in Switzerland, enclosing only a light framework of steel bars to give it additional strength. This bridge, only thirteen feet wide, and spanning a hundred and twenty-two feet, carried nearly twenty tons weight in the centre, without showing any sign of failure. Concrete consists of two essential parts, aggregate and matrix. The aggregate is usually shingle, broken stone or brick, or coke breeze, and the matrix is lime, or Portland cement. The proportion of the aggregate to the matrix is as seven to one, but it varies according to the materials used. The ratio, however, is seldom less than five to one. The strongest concrete is made with an angular porous material, and the weakest with smooth, rounded, non-porous shingle, which affords no key for the cement. Concrete should be made on a water-tight platform, at least eight feet square, and care should be taken to spray the water through a fine rose, so that the cement may not be washed away. A cement-concrete floor should be flooded with water every day for a fortnight at least after it is laid. Good concrete is a valuable material for foundations in soft and uncertain ground. Here, instead of using it in deep, narrow masses, it should be spread in layers in wide, shallow trenches, so as to distribute the weight of the superstructure over as large an area as possible.

Pure lime is not of much value for buildings, except, perhaps, for plastering, as it is soluble, and will not "set" under water. Hence, for use in foundations and walls exposed to the weather, an impure lime is a necessity. The impure limes are derived from lias limestone, or any such stone having, in combination with calcium carbonate, not more than twenty-five per cent. of aluminium silicate. Aluminium silicate confers the property of insolubility; hence, such a lime is called "hydraulic," since it sets under water.

Sand used in mortar should be clean and sharp. Rubbed between the fingers when damp, it should leave no stain, and its fineness should be such that it should pass through a sieve of twenty meshes, and be caught in one of thirty meshes, to the inch.

Red and yellow sands are usually colourless grains of silica coated with iron oxide. This may be removed by washing the sand in diluted acid. Where sand is not easily obtained, crushed sandstone is sometimes used instead, and burnt ballast is frequently substituted for it in clay districts.

Cement and Mortar.

Portland cement is a calcined and finely-ground mixture of chalk, or other limestone, with clay or mud of a peculiar kind. It is tested by making a portion into briquettes of one inch or one and a-half squares or sections, which are broken in a specially-constructed machine to ascertain the tensile strength. But, as such tests have no conceivable relation to cement work in actual practice, they need not be noticed here. An over-limed cement is hard to grind, is heavy, and sets slowly. An over-clayed cement, on the contrary, is light, sets quickly, and weathers badly. The grains in any cement which may be caught on the finest sieve are valueless as cement, and worth no more to the purchaser than so much sand. Portland cement is invaluable for building piers of small area, and new work to be bonded to old, for it sets as it is used, and does not contract and cause settlements, as lime mortar would do in similar circumstances.

Mortar is made by mixing lime and sand in varying proportions, usually from one to two, or one to three, according to the nature of the materials employed. The use of a mortar mill is of questionable value, except from a labour-saving point of view, for the sand, if sharp, is rounded, and if ballast is used it is converted into mud. Mortar, properly beaten and tempered by hand, or mixed in a pug-mill by horse labour, is stronger than that ground under edge runners. Mortar should always be made under cover.

Bricks.

Speaking generally, bricks should be of good shape, well burnt, and so hard that, when two are struck sharply together, they should ring like metal. White bricks are made in Suffolk. Buff bricks, varying from primrose to pale yellow, are manufactured in several English counties from gault clay. Blue and white brindle bricks come from Staffordshire. Red bricks are made from glacial drift, alluvium, and the clays of the older deposits wherever they occur. Fire-bricks are always made from siliceous clays of the coal measures. Ornamental bricks of every conceivable shape are now made by pressing the clay into moulds. In old times such bricks were all hand-worked, and they stood the weather well, which is more than can be said for some of the modern ornamental bricks, which decay before the building in which they are used is roofed in! Some bricks are made with clay containing minute pebbles of lime. These will slake out when exposed to the weather, and destroy the face of the brick. Others made from sandy soil are so porous that they allow rain-water to pass through them freely, and it is a common thing to see a wall of such bricks painted or tarred to keep the wet out. A solid nine-inch brick wall is not rainproof in this climate. In fact, it would not be safe to say what thickness a solid wall should be to keep out damp. That walls of ordinary thickness do not do so is evident from the fact that outside brick walls are frequently built with cavities—that is, with a vertical air space somewhere in the wall between the foundation and the roof. Hollow terra-cotta blocks of various colours, filled with concrete, are now extensively used for facing buildings instead of brick or stone work. Some of this work does not weather well, but the material has not yet had a sufficiently extended trial to enable a safe conclusion to be reached as to its weather-resisting powers. It is generally used for casing brickwork or structural steel framing, and seldom to carry heavy weights, for which it is apparently not fitted.

Stone.

The limestones furnish ordinary and hydraulic limes, as well as an immense number of building stones, from the Bembridge of the Tertiary rocks to the Coniston limestone of the Upper Cambrian chalk. Purbeck stone, Portland stone, Bath stone, inferior oolite, lias, magnesian limestone, carboniferous limestone, Great Devon limestone, and Wenlock limestone all belong to the series, which represents a lapse of time of probably over three hundred million years.

The sandstones have several representatives, from the "fire-stone" of the secondary rocks to the flags and massive grits of the pre-Cambrian. Out of all these stones to select a good one for building appears to be well-nigh an insoluble problem, judging from the condition of many important buildings throughout the country. This is probably due in some measure to the fact that architects and contractors have not yet agreed as to what constitutes a good building stone, the former defining it as one that is durable, the latter as one economical in working. Both properties are unfortunately not often combined in the same stone. It is not easy to say what amount of experience is necessary to teach builders what stone to use and what to avoid, for in public buildings erected within the past ten years stone was used which an elementary knowledge of that material, based on the most superficial examination of existing structures, would have shown to be quite unfit for the purpose. It seems as if every new generation of builders failed to profit in the least by the experience of those who went before.

Even some specialists who make a study of this subject fail completely to grasp a rudimentary knowledge of the cause of decay in building stone. It is asserted dogmatically

by one that the porosity of a stone is a measure of its durability, despite the fact that in the same building, side by side, a stone absorbing water to the extent of three-eighths of a pint to a cubic foot may be seen in rapid decay with another material in good condition which absorbs no less than twelve pints to the foot. Another asserts that specific gravity is a measure of durability, forgetting that even granite, weighing 171lb. to the cube foot, will sometimes decay more rapidly than a porous limestone (travertine) weighing only 88lb. Again, chemical composition is credited with having much to do with the weather-resisting quality of a stone. But this theory fails, for of the two nearly pure limestones, Bath-stone and carboniferous limestone, some beds of the former scarcely last out the completion of the building in which they are used, while the latter, fresh with the mason's tool marks, may be seen in the pre-historic round towers of Ireland. It follows, then, that neither porosity, nor weight, nor resistance to strain, nor chemical composition is alone to be considered in judging the durability of a building stone. A series of experiments conducted by the writer has convinced him that the physical condition in which the component minerals exist in a stone has much to do with its durability, and taken into consideration with the various properties enumerated above it has everything to do with it. The ring of a stone under a chisel struck smartly with a heavy mallet is a good index to its weathering properties, for it tells of the physical condition in which the material exists in the stone, and an intelligent workman being consequently in an unique position to decide on the goodness or badness of any stone which may pass under his hands, he should be relied on in this matter by whoever takes an interest in erecting a durable building. An important matter to recollect in connection with stone-work is that iron should never be inserted in it where both are exposed to the weather, for the iron rusts and expands with irresistible force, bursting the stone.

Timber.

It may safely be said that less is known of the structure and properties of timber than of any other material which passes through the builder's hands. This ignorance is frequently shared by the architect, who is apparently indifferent as to whether the wood used under his superintendence is likely to last a reasonable time or perish by premature decay. Now, no one thinks of using oak, except occasionally in churches, any rubbish shipped from Sweden, Russia, or Canada being good enough for the jerry-built structures found in all our towns. To gauge the change in this respect one has only to try to realise what the difference is between a piece of "heart of oak" and an "inferior fifth" quality of Swedish deal, a by no means uncommon class of building timber at present. Soon after the removal of the timber duty (in 1866) the country was flooded with foreign sawn scantlings, chiefly planks, deals, and battens, which varied in size from 11in. by 4in. to 7in. by 2½in., and these largely displaced the logs hitherto sent, for they saved sawing, and were consequently cheaper than the same sizes cut from logs here. This flood of foreign sawn timber continues to increase, while the sizes of scantlings diminish, and the quality of the timber goes from bad to worse. Logs of reasonable size must be cut from well-grown, large-size trees, but a 4in. by 2in. rafter can be, and is, cut from a scaffold pole nearly all sap-wood. On many scantlings, including flooring boards, the bark may be seen where the corners are "waney" and do not hold the full size specified, which is another growing fault with these imported pieces. In fact, this marked deterioration of foreign sawn timber is so well known that it is rightly excluded from many important works, and such timbers only allowed which are cut from large logs specially selected as free from sap, shakes, and large knots. A standing clause in architects' specifications is that all timber shall be "free from sap," but this apparently simple provision is negated by trade custom, which defines "free" from sap to mean "reasonably free" from it. Architects should not use trade terms, or, if they do so, a clause should be inserted in their specification stating that the words are not to be interpreted by any trade custom, but are to be taken in their plain meaning.

The Preservation of Timber.

From the time of Noah's ark up to the introduction of railways no other ways of preserving timber was thought of than by soaking it in water and drying it under cover in open sheds. To render it non-flammable was supposed to be quite impossible, and not even attempted. The rapid decay of railway sleepers first stimulated research into the nature of wood, the conditions affecting its decay, and the best methods of arresting it: now no railway sleeper is laid before being subjected to one of the many processes invented for its preservation. But a railway sleeper differs essentially from building timber in that it need not be seasoned; it is exposed to conditions unknown anywhere else, and being always in the open air it may be impregnated with preservatives that would be altogether objectionable in any building. It follows that as preservative processes applicable to sleepers would probably be altogether unsuitable for building timber one must be adopted which would not render the wood objectionable in any way to the sense of smell or alter its texture and substance so as to interfere with its conversion into joinery or cabinet work. The process adopted in rendering wood non-flammable effects this and more, for it effectually preserves the sapwood as well as the heartwood, renders both fireproof, and turns the wood out so thoroughly well seasoned that it may be safely used for the finest cabinet work; and all this is done without any apparent alteration in the wood itself. In fact, it may be said that with the introduction of non-flammable wood a new constructive material is placed at the disposal of the building trade. Wood in ordinary dry air retains from 10 to 12 per cent. of moisture, in damp air it absorbs much more, in kiln-dried wood all this is driven off, and it is a matter of vital importance the wood should not be exposed, for it will rapidly reabsorb moisture. Non-flammable or other highly-dried wood should not be painted nor varnished if it is allowed to stand for any time in a damp place, for the moisture shut up in the wood will be prejudicial to its durability. It is well known that doors and other fixing dried in the ordinary way, if exposed in a newly-plastered room, will absorb moisture rapidly, and swell so as to force framed and other work asunder. How much more likely is it that kiln-dried or thoroughly seasoned wood will act in this way! In recently-formed sapwood water passes freely through the substance of the cell wall and with it any substances held in solution, but matter held merely in suspension cannot pass. The cell walls are cellulose, and in the older wood ligno-cellulose; the one absorbs water and transmits it freely, the other tends to lose that property. Hence in all wood-preserving processes the sapwood is more readily dealt with than the heart wood.

Wood-work in Buildings, and Non-Inflammable Timber.

For the erection of any building, whether of a temporary or a permanent kind, for immediate use where dry walls and ceilings are an absolute necessity there is no material that can equal timber. That wood was at one time extensively used for building even the outer walls of houses in this country is proved by so many weather-boarded houses in old inland and sea-side towns, which date back for over a hundred years or even a hundred and fifty. Local government, however, has for the present put an end to the construction of wooden buildings on account of the inflammable nature of that material, but as non-flammable wood is faultless in this respect, cosy, picturesque, and comfortable wooden houses may again be seen even in our cities. Leaving sanitation out of the question, as it does not affect woodwork, nearly all the remaining building bye-laws are framed with a view to rendering buildings fireproof, and they are based on the fact that wood as ordinarily used is an inflammable substance, the ignition of which must be guarded against. Now, as it is well known that non-flammable wood used in a partition has resisted gas flame of a temperature of over 1,500 deg. F., charring merely on the side exposed to the flame, it follows, then, wood can be rendered as fire-proof as brick, more so than stone, and very much more so than steel. In the erection of an ordinary house built with bricks and mortar tons of water is used, the bricks must be soaked in water or the mortar will not adhere to them, the mortar itself must be

semi-liquid with water, and the wall plastering is saturated with it. All the water must be got out of the walls before the house is fit for occupation; some of it no doubt evaporates during the progress of the works, then an enormous quantity must be gradually given off into the air of the rooms for years after the house is built. Timber which is painted or varnished exposes a surface absolutely non-porous to the atmosphere, hence it has an immense advantage over brick and stone in this respect; in fact wood not covered in any way has a much less absorbent surface than either of those materials. Wood, therefore, considered as constructive material possesses properties peculiar to itself. These are durability, strength, stiffness, and elasticity within certain limits, all combined with great resistance to heat transmission and non-flammability except when freely supplied with air. It may be said that though wood does not rank as a fireproof constructive material it resists fire under certain conditions much better than steel or iron. A solid floor of dry fir 9 in. thick, covered on the top with floor boarding, was exposed on the under side to a temperature of 2,000 deg. Fahr. for an hour, with the only result that the wood became incandescent and was converted into charcoal for a depth of from 1½ in. to 2¼ in., the boarding on the top remaining intact, while a steel joist floor filled in with solid cement concrete collapsed after the application of a heat of 1,500 degrees Fahr. for a comparatively short time. A temporary house may be built with wood throughout, and a permanent one with wood and tiles to protect it from the weather.

Steel Joists, etc.

Up to the middle of the last century floors spanning over 12 feet were generally framed, and always in wood. Single steel joists take the place of girders, binders, and bridgers, and all the labour of framing a wood floor, with its tenons and mortices, is done away with. The floor, too, is much stiffer, and it can be rendered absolutely fireproof. Though steel is incombustible, it is not a fireproof material. There are two systems adopted for the protection of steel floor joists. Either they are buried in concrete, or cased by fire-clay hollow blocks; there are modifications of both systems. Thus it has been found that concrete alone is not a safe casing; it must be supplemented by a steel netting of light iron rods or metal lathing of some kind to prevent its coming away from the steel framing when cracked by fire and water. All fireproof floors are spanned with concrete made of shingle, breeze, or pumice, on which is fixed a wood floor, with an air space under the boards. When fire-clay hollow blocks span the intermediate spaces from joist to joist, an uninterrupted air space is maintained which is in connection with air breaks in the outside walls.

Slates.

The material in general use for roofing is slate: it is durable, light, easy to work, and cheap; has no rival, and is not likely to be displaced in the near future by any of the various substitutes proposed. Stone tiling was once common in England, and this made charming roofs, the tiles being half an inch or three-quarter-inch thick. The wearisome monotony of a roof covered with "best Welsh slates" was avoided, and the ever-changing colours of the lichens and mosses which grew freely on them gave variety to the roof slopes, in startling contrast to the ever-clean and new-looking red and blue slates. Unfortunately, these beautiful old roofs are becoming things of the past, for on farm buildings especially they are being removed to make way for corrugated iron, or that most hideous of all roof coverings that the wit of man could devise—blue Staffordshire tiles. Slates are quarried or mined in various places in the United Kingdom, and they are also largely imported from France and America, but these are no improvement on the native article, and are used solely because they are cheap. Welsh slates are the best known, and most celebrated in the world. This being so, it is only natural to find that there are real "Bangor" slate quarries in America, where they obtain "real" Bangor slates for home use. Bangor slates are of a reddish tint, and Portmadoc blue. There are green veins in some of the North Wales quarries, but they are seldom worked. In South Wales silver-grey slates are quarried in

the Whitland Abbey district. Here, as well as in North Wales, all the slate rocks are found in Cambrian and Silurian strata. Cornwall furnishes the well-known De la Bole slates, which have been worked for centuries, and were at one time largely exported to the Continent. These, with the coarser slates of Devonshire, are all obtained from altered rocks of Devonian age. The Lake District furnishes the well-known green slates of Westmoreland and Cumberland.

[In Ireland there are excellent slates quarried at Carrick-on-Suir, Valencia Island, and by the Killaloe Slate Company, at Killaloe. These latter slates are, generally speaking, of excellent quality. They are of a nice grey-green colour. Their chief defect is a liability to veins, and a certain brittleness which makes them difficult to get safely on a roof; but this can easily be obviated by using them thick. They are not fit to split into the ordinary miserable wafer-like slate of commerce. The secret of using Irish slates is to have them cut thick and very rough; they then make a charming roof if used small—say, 16 inches by 12 inches.—EDITOR.]

Glass is an uncompromising material for fire-proof construction, but it can be so treated as to resist fire. In the fire-proof system of glazing, the panes are small, not more than a few inches square, or they may be in curved patterns. The glass is held together by thin soldered copper strips, and the panel immersed in a bath of cupric sulphate; a battery in connection with this bath causes copper to be deposited on the exposed parts of the glazing strips, which has the effect of securing each piece of glass in a grooved and air-tight frame. Windows glazed in this way will stand fire and water, the copper strips remaining uninjured, even though the glass panes star and crack. Of course, glazing of this kind should be fixed in non-flammable wood frames.

The "Loges" at the Ecole des Beaux Arts.—

During the vacation at the Ecole des Beaux-Arts a considerable amount of work has been done in re-arranging the various studios, and the old Ateliers Andre have been transformed into a museum for the exhibition of the various work done by competitors for the past scholarships at the Ecole. It was intended to put into a thorough state of cleanliness and repair the large number of cubicles in which the competitors are shut during the Prix de Rome competitions, but the walls are so covered with cartoons and sketches by old students, since become masters of French art, that it was decided not to touch any of these portions. A series of new "loges" are now being arranged in a simple but rather dainty manner for the use of the recently-admitted female students.—*Builder*.

A "Sleeper" for Twenty Years!—Many large businesses are carried on in this country for the importation of sleepers for our home railways and elsewhere. A fact or two about the quantity, kind, and price of sleepers should be interesting to Irish people, where the sight of a sleeper is so well known. The kind of wood universally used is Baltic redwood, which, when seasoned, will neither shrink nor swell, it being the only wood which has this characteristic, a property of great importance to keep the lines the proper gauge. For this reason redwood sleepers are sent to India, which an uninitiated person would say was like sending coals to Newcastle. The life of a sleeper, when creosoted, as the process is called, is from 15 to 20 years. The almost universal dimensions of a sleeper are 8 ft. 11 in. long by 10 in. wide, and 5 in. deep, or, as it is written in the trade, 8 ft. 11 in. by 10 in. by 5 in. Some are larger and others smaller, so they differ in price, which may be put down in round numbers at 2s. 6d. per sleeper, and, when creosoted, about 3s. for the 10 in. by 5 in. Large companies, like the Midland Railway, issue every year contracts for about 500,000 sleepers, which number will give the reader some idea of the forests cut down yearly in Russia to supply England alone.

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VOL. XLIII.

NOVEMBER 21, 1901.

No. 1005

The Queen Victoria Memorial.

On October 30th there was opened an exhibition of designs for the proposed memorial to her late Majesty. As already announced, Mr. Aston Webb's design has been selected. Five selected architects competed—three Englishmen, one Scotchman, and one Irishman (Sir Thomas Drew). The strongest point of Mr. Webb's design is his plan, and the main feature of this is a big semi-circular colonnade forming an enclosure immediately outside Buckingham Palace. In the centre of this is placed Mr. Brock's memorial to the Queen. From the Palace eastwards runs a fine avenue along the lines of the present Mall. This should afford a really fine vista from the Trafalgar-square end.

Generally speaking, all six designs are worthy of high praise, but Mr. Webb seems to have best grasped the possibilities of the project. Beautiful detail and excellence of judgment characterise the designs. But it is when we come to consider each design as a piece of grouping that one perceives the apparently utter incapacity of the British architect to deal with great projects on lines of majesty and dignity. There is wanting a sense of unity. The whole thing is frittered away in petty, though charming, features. This is where the French, and even the German architect so often scores. With a taste in detail and applied ornamentation that frequently borders on the vulgar and ostentatious, he yet contrives to lay out the main features of a great "project" on lines that are grand and imposing. Abroad, many a building which, in its detail and interior planning is beneath contempt, often conveys an impression far surpassing the greatest of minor buildings. Of course, there are a few notable exceptions. For instance, Greenwich Hospital; and we in Dublin have a few excellent examples, such as the Custom House and Trinity College. St. Paul's Cathedral, no doubt, is a great masterpiece; but the parsimony and pettiness of British middle-class sentiment in matters of art have prevented it from ever obtaining an adequate "setting," because it is hemmed in and surrounded by mean buildings on all sides. In Mr. Webb's design the great semi-circular enclosure outside the Palace is, no doubt, a great feature, but it is open to the criticism we have made—the main entrance to it appears to be through three pairs of gates of far from imposing proportions, while the pair of obelisks by which these are flanked are absolutely meaningless—not to say mere excrescences on the composition—while inside the semi-circle the radiating quadrilateral parterres of grass, flowers, and water are finicking, and altogether wanting. Taking the design in detail, it is a beautiful one; but, regarding it in the light of an effort to accomplish a great composition, it affords a shining example of the inferiority of the British architect in such matters. Of all the architects competing our countryman, Sir Thomas Drew, alone appreciated the absolute necessity of replacing the present miserable facade of Buckingham Palace by a new and dignified composition.

Town Populations in Ireland in 1901.

The following statement shows the towns having in 1891 a population of 10,000 or upwards. The Parliamentary Boroughs, and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown, are arranged according to their percentage of increase or decrease of population between 1891 and 1901. From this table it will be observed that the largest percentage (27.8) of increase of population between 1891 and 1901 was in Belfast, and the next (20.0) in Londonderry. The greatest percentage (6.9) of decrease would appear to have taken place in Drogheda; Lisburn presents the next highest percentage (6.5) of decrease. Cities, towns, and Parliamentary Boroughs are arranged in the order of percentage of increase or decrease of population between 1891 and 1901. Those marked (*) are Parliamentary Boroughs:—

Cities, Towns, &c., arranged in Order of Percentage of Increase of P. opulation.

Cities, Towns, &c.	Population.		Increase.	
	1891.	1901.	Total.	Per-centage.
Belfast	273,079	348,965	75,886	27.8
Belfast*	273,114	348,876	75,762	27.7
Londonderry*	33,200	39,873	6,673	20.0
Rathmines and Rathgar	27,796	32,472	4,676	16.8
Dublin	268,587	289,108	20,521	7.6
Pembroke	23,992	25,524	1,532	6.4
Dublin*	269,716	286,328	16,612	6.2
Sligo	10,274	10,862	588	5.7
Dundalk	12,449	13,067	618	5.0
Blackrock	8,401	8,719	318	3.8
Lurgan	11,429	11,777	348	3.1
Cork*	97,281	99,693	2,412	2.5
Limerick	37,155	38,085	930	2.5
Waterford	26,203	26,743	540	2.1
Kingstown	17,183	17,356	173	1.0
Cork	75,345	75,978	633	0.8
Waterford*	27,713	27,947	234	0.8

Cities, Towns, &c., arranged in order of Percentage of Decrease of Population.

Cities, Towns, &c.	Population.		Decrease.	
	1891.	1901.	Total.	Per-centage.
Drogheda	13,708	12,765	943	6.9
Lisburn	12,250	11,459	791	6.5
Kilkenny*	13,722	12,924	798	5.8
Kilkenny	11,048	10,493	555	5.0
Newry*	13,691	13,121	570	4.2
Galway*	16,959	16,245	714	4.2
Wexford	11,545	11,154	391	3.4
Newry	12,961	12,587	374	2.9
Galway	13,800	13,414	386	2.8
Limerick*	46,135	45,806	329	0.7

NOTE—The areas of Dublin, Belfast, and Waterford Cities and Drogheda Municipal Borough have been enlarged since 1891; the figures here given relate to the extended areas.

Electric Light and Water Power.

IN our last issue we published an article on the application of water to the creation of electrical power and light in Irish towns. The writer of our article takes a roscate view of the possibilities of Irish water power, and it cannot be denied that in many instances the rivers and falls near to many provincial towns are capable of great possibilities. The "harnessing of Niagara" was a great achievement, but it is one hardly likely to be repeated, for the circumstances were unique. Our contemporary, the *American Architect*, recently made some apt observations on this subject:—

"We so frequently find in our foreign exchanges illustrations of projects for utilising mountain-torrents for the

manufacture of calcium-carbide, or for setting up factories in the most beautiful Alpine valleys, that it is rather a satisfaction to learn that, as is shown by statistics, these mountain-establishments are not, as a rule, commercially profitable. To the average Philistine, the sight of a thousand-horse-power cascade 'going to waste,' suggests the thoughts of reclaiming it; but the reclamation is not such a simple matter as it seems. It is true that flumes can be built and turbines installed in almost any situation; but the turbines furnish nothing but power, and the cost of power is a comparatively small item in the expense-account of a manufactory. Many owners of factories driven by water-power, on reckoning up at the end of the year the cost of repairs to turbines or flumes, damage done by freshets, loss of time and interest, and forfeiture of contracts or loss of customers, by delays incidental to scarcity of water, have regretted that they did not use a steadygoing steam engine in place of the capricious forces of nature; and many more, who, after a few years' experience, have abandoned the water-power for the steam engine, have regretted, and still regret, that, for the sake of appropriating what they supposed to be cheap water-power, they have placed their factories where transportation, both of materials and finished product, is costly; where labour is expensive and not easily procured, and where markets are almost out of reach; while, if they had only known, in the first place, how little saving there would be in using water-power, they might have invested their money much more profitably in building their establishments near their customers and the public, close to competing railway lines, and in the vicinity of an unlimited population of intelligent working-people. It is said that certain plans for utilising the immense power of the Rhone, near Bellegarde, have already been abandoned, in consequence of a thorough inquiry made by those interested; and the lovers of nature would not be sorry to see some of the existing Alpine industrial establishments dismantled."

Bribery and Building Laws.

The *American Architect* says:—The hand of the corrupt politician, in straits to find means of replenishing his finances, is, we fear, to be seen in the amendment to the building laws proposed in New York, which provides a term of imprisonment as the penalty for violation of the building code. Few people not familiar with New York understand how widespread corruption is there, how enormous is the annual sum extorted by means of it from citizens, and how large is the number of people who have no other means of support than their share of it. Like the New York bribery laws, which, by making the offering of the bribe a criminal offence, simply enable the receiver of it to extort a larger sum than he could otherwise do, a building statute, providing imprisonment for violation, instead of, or in addition to, a fine, would put it in the power of inspectors, instead of overlooking an alleged technical violation for a consideration varying from a glass of beer to a ten-dollar bill, to hunt up the owner, the architect and the builder, and offer them their choice between handing over fifty dollars apiece, and spending some time in jail, on his complaint, until their case could be heard. Fourteen years ago, although the penalty for violation of the building laws was only a fine, inspectors were permitted by law to make arrests, and these ingenious gentlemen soon discovered the advantage of calling upon a parsimonious owner or builder on Saturday afternoon, too late for him to obtain bail, and dragging him off, or threatening to drag him off, to the Tombs, to spend his time there until the bail-commissioner's office was opened on Monday morning. The proposed new law would, under present conditions, be infinitely worse than the old one. Every architect who has built in New York knows that it is next to impossible to avoid some technical violation of the building laws, which are by no means free from the suspicion of being made intentionally vague and ambiguous in certain places. In cases under the charge of architects, the inspector's directions, or his interpretation of the law, are, as a rule, complied with at once, and the matter ends without profit to the inspector and the gang behind him; and the boodle-hunters have been obliged to

rely for their profits from this source mainly on the third-rate speculating builders, who could afford to pay something, although not a very large sum, for connivance at a real violation. Under the proposed amendment, the plunderers will be able to reach the honest and respectable people, who, having no desire to violate any law, and being always ready to correct any unintentional error, could not be laid hold of under the present statute, but can, presumably, be brought to terms by the prospect of summary incarceration at the pleasure of their persecutors.

OUR ILLUSTRATIONS.

NEW LODGE NEAR GUILDFORD.

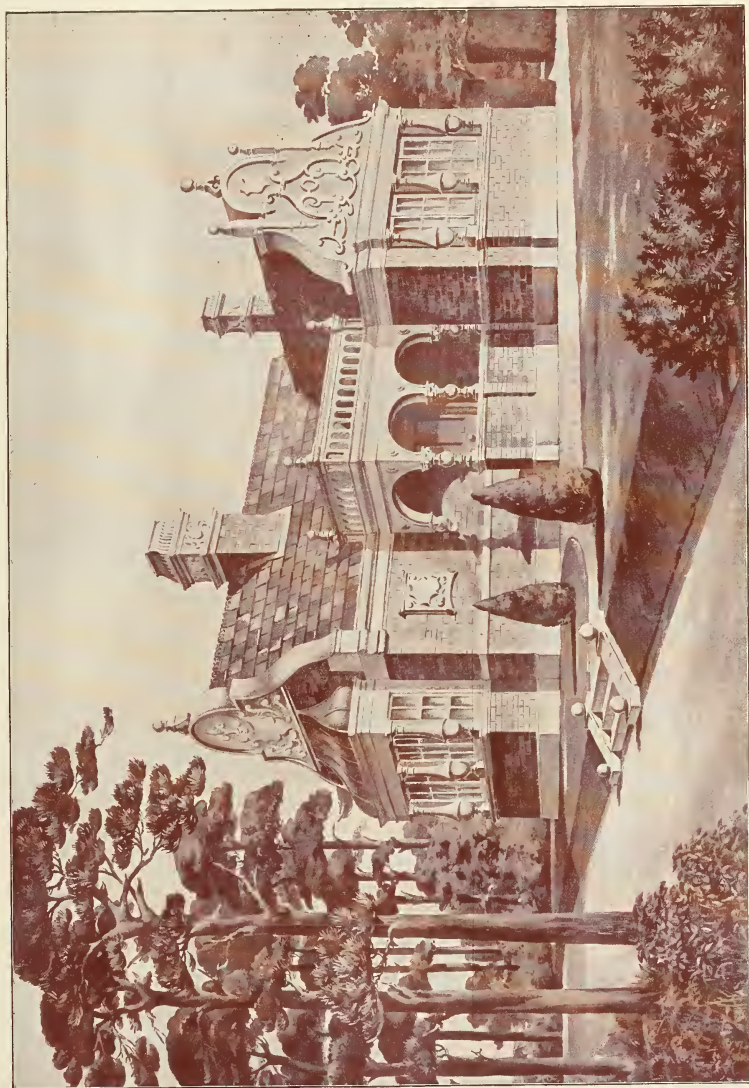
Our illustration represents a lodge about to be erected near Guildford. The walls will be of best hand-made and picked bricks of a deep red colour, from the Worplesdon Brick Company. The roof will be covered with tiles of the same colour. The stonework will be from the Monks' Park quarries. The accommodation is a porch, small lobby, living room, 12 feet by 10 feet; bedroom, 12 feet by 10 feet, both with large bay windows; another bedroom, 12 feet by 8 feet; good scullery, 10 feet square, with pantry and usual domestic offices. The contract price is £650. Although a small place, there is a large amount of stonework and carving. The floors, windows, and doors will be of oak, grown on the estate. The architect is Mr. W. Chambers, Savoy House, London.

LAW CASES.

WHAT IS A MARKET OR A CORPORATE TOWN?

Mr. Swifte, K.C., Divisional Magistrate, sat in the Police Court, Kingstown, recently, and during the sitting heard the following case:—Mr. James W. Horner, builder, Killyliney, was summoned by the Dalkey Urban District Council for building cottages within 30 feet from the centre of the Sorrento Road, contrary to the provisions of the Summary Jurisdiction Act. Mr. Edward C. Coll, instructed by Mr. M'Laughlin, solicitor, appeared on behalf of the prosecuting Council, and Mr. Cochrane, solicitor, represented the defendant. Mr. J. P. Gahan, Clerk to the Urban Council, gave evidence to the effect that the Dalkey Commissioners had refused to approve of defendant's plans, because the houses were within 30 feet of the centre of the road. The prescribed limit in a market or corporate town was 20 feet. In his opinion Dalkey was not a corporate town or a market town because it had no Mayor or Corporation, nor was there a market held in it. Mr. Casey, member of the Dalkey Council, gave evidence to prove that the Sorrento road was a public road. Within his memory, extending over 60 years, the road had been used by all manner of vehicles as a public road. Mr. Cochrane said he had not been able to find a legal definition of a market or corporate town. Under a section of the Township Act Dalkey was defined a market town for certain purposes. If it was a market town for any purpose it was a market town for all purposes. Mr. Swifte—The Act only enables the Commissioners to make it a market town. Mr. Cochrane—The fact of giving them permission makes it a market town. Moreover, it is a corporate town. Section 4 incorporates the Commissioners as a corporate body. Therefore, they had no power to proceed, as his client's property was exempt from the operation of the Summary Jurisdiction Act, the houses being more than twenty feet from the centre of the road. He contended that the Act which affected the summary jurisdiction of justices did not affect the limitations laid down in the 7th and 8th Victoria, where the limit was twenty feet. Mr. Coll said a resolution of the Commissioners would be required to make Dalkey a market town. He contended, as to its being a corporate town, that Mr. Gahan's was the correct view to take, and that the Summary Jurisdiction Act extended the limits from twenty to thirty feet. Mr. Swifte said he would reserve judgment.

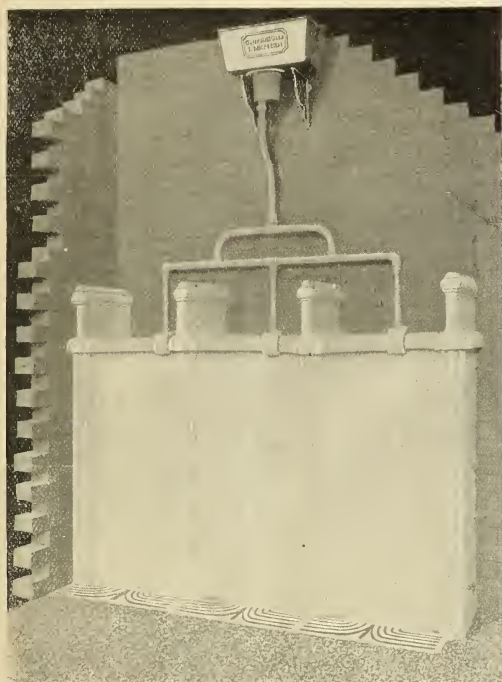
Subsequently a decision in favour of the defendant was given.



NEW LODGE NEAR GUILDFORD.

Architect—MR. W. CHAMBERS, SAVOY HOUSE, LONDON.

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LIVERPOOL CATHEDRAL.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR,—The thanks of the entire body of architects are due to the Press for its powerful help in the cause of architecture generally, even more than in that of the Liverpool Cathedral in particular. By opening its columns to a discussion of the original conditions of competition issued by the Liverpool Cathedral Committee, and to the protests made by architects against the Committee's claim to prevent freedom of thought and expression amongst those who should submit designs for the Cathedral, it has done much to obtain a better appreciation of architecture.

The withdrawal by the Liverpool Cathedral Committee of their first conditions of competition, and the issue by them of amended conditions wherein the word "Gothic" is omitted, is a great act of moral courage, which will have far-reaching effects. Indeed, it would not be surprising if, from that act of the Cathedral Committee there should date a very general recognition of what architecture truly is—viz., the art of building, not the science of reproduction.

But the Committee must take a further step, if the Liverpool Cathedral is to be all that it might be. They must, in fact, boldly abandon all idea of using the cheap and make-shift site of St. James' Mount, and they must stake their all upon the site first selected—viz., that of Monument-place. They are already possessed of sufficient funds to secure the latter site, even if not to also commence building operations; but even as a magnificent site would inspire architects to magnificent architecture, so would it inspire those to do so who are able to provide the means for its realisation.

The relative merits of the two sites are well understood in Liverpool, and, as they were referred to in my letter in the *Times* of 8th ult., it is unnecessary for me to add references thereto.

But, that a very strong opinion is rapidly growing throughout the country, as well as in Liverpool, in favour of the adoption of Monument-place site, there is no doubt whatever; and the Cathedral Committee must be fully aware that such is the fact, from the practical cessation of contributions towards their St. James' Mount Site Scheme. The Committee would, therefore, only be far-seeing and wise to note the trend of popular opinion, and to launch a new and bolder scheme without delay.

It would, perhaps, require some greater moral courage than the Committee have already evinced to issue further amended conditions of competition; but the success of the competition, nevertheless, demands that even this step should be taken, as an analysis of the existing position will show. For, under the present conditions, there will be held a competition for a Cathedral to be erected upon an unknown site, upon unknown foundations, with unknown levels to be dealt with, and for unknown accommodation; and the drawings in explanation thereof may be working drawings or mere sketches, may be drawn to various scales or not to scale, may be in ink or pencil, coloured or uncoloured, and may be further illustrated by perspective views or by photographs; and, moreover, the designs may represent ideals, or accomplished facts. From this heterogeneous mass of information, to which the whole world is permitted to contribute, the Cathedral Committee undertake to decide which of the competitors, whether one or more, is to be adjudged by them worthy to submit further designs for the Cathedral; and the Committee will pay the sum of three hundred guineas to one or more competitors—if they decide to hold a second competition—for work which, if it is to be efficiently performed, would involve an expenditure by each competitor of from 18 months to two years of time and thought, and some £500 to £600 of expenses. Surely it must be very obvious that such a form of competition will not only fail to call forth the best possible design, but will also result in a hopeless embroglio, from which even their professional advisers would be quite powerless to extricate the Committee.—I am, sir, your obedient servant,

T. MYDDLETON SHALLCROSS.

6 Dale-street, Liverpool, 8th November, 1901.

EXPANDED METAL CONSTRUCTION.

Among the numerous discoveries and inventions of the past century, perhaps nothing has been more useful and more generally acceptable to builders than expanded metal. Its uses in building are varied. As a tension bond in concrete it has no equal, and has proved a great boon to architects and engineers in the concrete floors that are now so generally used in all large buildings, allowing them to dispense with the numerous steel joists and the heavy weight of concrete on the walls, as by the judicious use of expanded metal a much lighter, though stronger, floor can be constructed. It is a well-known fact that concrete is much stronger in compression than in tension, and it is here that expanded metal fills a long-felt want. Increasing its tensile strength from eight to ten times, renders operations hitherto impossible thoroughly practicable. Clear spans "with concrete slabs" up to 11 feet can safely be taken, and the total thickness of the slab need not exceed 5 inches, unless a greater load of $1\frac{1}{2}$ cwt. to the foot super. is imposed. Expanded metal is the invention of Mr. J. F. Golding, of Chicago, U.S.A., who at present fills the important position of Managing Director of the British Company, whose head office is at 183 Great Brunswick-street, Dublin. Enormous quantities of expanded metal are consumed every year throughout England and Scotland, and the engineers and architects of Ireland were not slow to see its great utility as a building material of the first order, a steel armour for concrete, cement, and plaster. The rule that the sectional area of the steel should be one-half per cent. of the sectional area of the concrete should be adhered to as closely as possible. This is a deduction from various tests made from time to time. It may be taken, generally speaking, that for slabs 3 inches thick, No. "6" E Metal is most suitable; for slabs 4 inches thick, No. "8" E Metal is most suitable; for slabs 5 inches and 6 inches thick, No. "10" E Metal is most suitable; for slabs 9 inches and 10 inches thick, No. "10½" E Metal is most suitable. But it must be understood that, of course, the spans vary with the required load.

This can be proved in the following manner—1 per cent. is as 1 : 200. Taking the No. "8" metal there are eight strands $\frac{1}{8}$ in. \times $\frac{1}{8}$ in. in section, in a foot run $8\frac{1}{2}$ in. \times $\frac{1}{8}$ in. = $\frac{1}{16}$ in. \times $\frac{1}{8}$ in. = $\frac{1}{128}$ in. of a square inch of metal in section $4 \times 12 = 48$, as 1 : 192. This is practically one-half per cent.

The numerous tests made with concrete slabs, notably those carried out by Sir John Fowler and Sir B. Baker, all prove conclusively that an increase of from eight to ten times is attained by the embodiment of expanded metal. Experiments lately carried out by the British Fire Prevention Committee at their testing station, St. John's Wood, London, N.W., have proved that expanded metal is invaluable for fire-proof construction.

A ceiling was constructed and subjected to various degrees of heat up to 2,000 Fahr., but it failed to remove the plaster from the expanded metal lathing.

Another test was made under the auspices of the Birmingham Corporation, with a concrete slab, which was loaded with enormous masses of iron, and then subjected to a heat of about 3,000 degrees Fahr. The slab withstood this, notwithstanding the disintegrating effects of fierce heat and sudden application of cold water, with consequent rapid cooling.

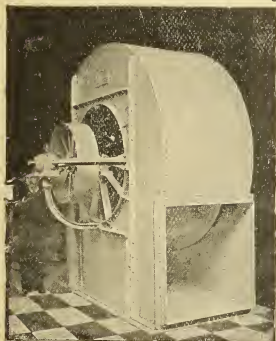
The thin metal embedded does not expand one tithe as much as the smallest R.S. joist, which, when embedded in concrete, takes considerably from the strength of the concrete itself, and thus weakens the slab, and also takes from its fireproof quality.

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It is needless to say anything about ceilings constructed on expanded metal lathing, beyond that they are vastly superior to the time-honoured wooden lath system, which has nothing to recommend it beyond the low price. Expanded metal is also largely used for boundary fences, for which purpose it is most useful and economical.

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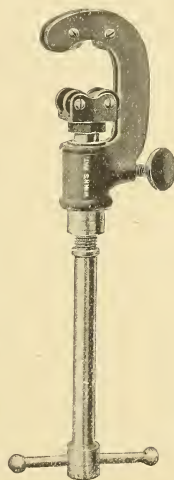
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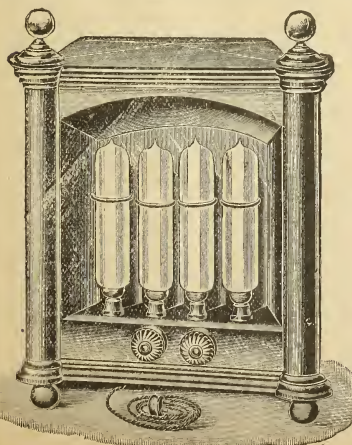
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Carlow.—Mr. T. F. MacNamara, Architect, 50 Dawson street, Dublin, has prepared plans for extensive alterations to the Catholic Chapel at the Lunatic Asylum. Mr. D. W. Morris, of Dublin, is the surveyor.

Clonfert.—In the report of the Diocesan Council of Clonfert and Kilmacduagh, presented to the Synod recently, it is stated:—"Your Council is glad to report that the restoration of Clonfert Cathedral is in a very forward state, and that, though there has been a temporary cessation of work, owing to lack of funds, chiefly caused by failure of contributions accounted for by the continuance of the South African war and other reasons based on recent land agitation, yet Canon M'Larney hopes to be able to carry out the original plans, and complete the task which he has undertaken. Your Council rejoices that the re-building and re-furnishing of St. John's Church, Ballinasloe, has been satisfactorily completed, and the church has been consecrated and opened.

Derry.—We have pleasure in noticing another accession to the larger class of factories, which has been completed and opened on the Foyle-road by the firm of Messrs. Charles Bayer and Co. All the shafting and fittings for the electric power and lighting are of the best description, and are seen here to perfection. One is struck by the amount of forethought exercised by the Messrs. Bayer for the comfort, health, and convenience of the workers. The lavatories and sanitary arrangements are based on the most up-to-date pattern and principles. The third floor is of the same dimensions as the first, and the appointments are in like manner. This floor is devoted to the examining, folding, and ironing of made work; and the work for country stations, both hand-made and machine work, is prepared here. The fourth floor is set apart for raw stock, from which place it can be conveyed to the cutting-room and various other departments. The factory was designed by Mr. Daniel Conroy, architect, Derry, and the work undertaken by the late Mr. Joseph Coghoun, was, after his death, carried out principally by Mr. Bayer himself. Sub-contracts were carried out by the following firms:—Plumbing and telephones, Messrs. Doherty and Boyle, Londonderry; painting and glazing, Mr. William M'Closkey, Londonderry; fitting of engines, &c., Messrs. A. Brown and Sons, Londonderry; electric light wiring and fittings, Messrs. William Coates and Sons, of Belfast; glass by Messrs. W. F. Clokey and Co., of Belfast; lifts by Messrs. Moffatt and Eastmead, London; heating by Messrs. Skeith and Blackman, London.

Dublin.—Mr. G. C. Ashlin, R.H.A., Dublin, has been entrusted with the preparation of plans for the enlargement of Messrs. Clery and Co.'s extensive premises. This extension will take in the site of the present Imperial Hotel, thus removing one more well-known land-mark of the Dublin streets.

At St. Paul's Church, Ballymoney, a memorial pulpit of carved oak and a prayer-desk of oak, corresponding in design, were dedicated by the Lord Bishop of Cork. Both pulpit and prayer-desk were made by Messrs. Harry Hems and Sons, Exeter. The pulpit forms a hexagon. Each of five of the sides is composed of an open arch of three arches, with tracery in the English Decorated style, the arches standing on carved panels, each of a different design, the whole surmounted by a cornice of foliage deeply undercut and carved. The prayer-desk corresponds in design.



Belfast.—The Lord Bishop recently said church extension in Belfast seemed to be working extremely well from the assistance received from the General Synod and from the diocese. This called forth local help to meet the demands, and the people had been enabled to give a good deal of assistance, and meet, to a very large extent, the growing spiritual necessities of this great city. Fourteen parishes altogether had been assisted one way or another, and since 1892 something like 19 churches, or temporary places of worship, had been opened in the city. The great fund on which they had to rely was the local Diocesan Fund. The Cathedral in Belfast was proceeding, if slowly, yet very steadily. He must say the part presented towards Donegal-street could scarcely be called "stately." They would see there an immense mass of brickwork, and he feared for a long time yet that must be so, but in the design there was a very handsome western front to be put up, and he could think of no better object to which anyone willing to give a large sum of money in memory of a departed friend, or from the direct generosity of his heart, could devote it. The subscriptions actually paid in amounted to £21,047 and promised, £1,538, which, with the interest that had accrued, came to £22,626. Their present desire was to have the nave completed and fitted up for Divine service as a Cathedral, leaving it for the future to carry out the eastern portion of the design, which would, of course, be very costly, and that would require about £7,000 more.

Bagnalstown.—The committee met again at Bagnalstown Hospital to reconsider the question of a water supply and drainage system for hospital. A resolution was adopted to invite tenders for sinking of well and erection of pump. Mr. Hade, C.E., to estimate for other work suggested.

Bray.—New electric lighting plant is to be purchased.

Dublin.—DUBLIN TO SLANE ELECTRIC RAILWAY.—On Thursday week a meeting was held at the City Arms Hotel, Prussia-street. Mr. E. Kelly, C.C., presided. A large number of promoters were present. Subscriptions were handed in. Messrs. Nevins and Frazer, engineers, gave further details as to their proposals for the working of the scheme. The hon. treasurers, Messrs. C. J. Keogh and J. J. Butterly, and the hon. secretaries, Messrs. N. Crinion and R. P. Lundy, were in attendance, and the report of the Sub-committee was adopted. After some discussion it was resolved that a public limited company be formed at once for the promotion of the railway scheme.

NEW POWER STATION AT THE PIGEON HOUSE FORT. Operations are in active progress at the Pigeon House Fort in connection with the erection of the new electric light station for the Dublin Corporation, and the works are at present a veritable hive of industry, thousands of hands being employed on the undertaking. Those who remember the old fort in its military days would have some difficulty in recognising it in its present appearance, so complete a transformation has there been effected. The majority of the buildings have already been removed, those remaining being used as stores, workshops, etc. As the work progresses these will also be pulled down to make room for the new structures. It is not, however, considered necessary to interfere with the large building known as the hotel, which was formerly the officers' quarters, and which will in future provide sleeping accommodation for the staff employed at the new station. Another land-mark, the old garrison chapel, remains undisturbed. The works at present in progress extend, including the harbour, over an area of about six acres, and the buildings when finished will

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cover something like an acre. At present the harbour is closed, this being necessary in order to allow the construction of a solid concrete wall, which cuts the harbour virtually in halves, and separate the works from those of the main drainage, whose tanks will be on the western side of the new wall. When re-opened, the harbour will be of immense importance to the station, as colliers will land their cargoes at the very doors of the boiler house, which will be on the immediate quayside. The boiler house itself will be a commodious building, 180 feet in length, and 53 feet wide, and will be fitted on the harbour side with 12 openings. The plant will consist of four double sets of Babcock boilers, and six Lancashire boilers, each being mechanically stoked. In a corner of this building the pump room will be situated, and deep cuttings are at present being made for the laying down of a 30-inch intake pipe, which will provide the condensers with sea water. Immediately behind the boiler house, and of similar dimensions, will be the engine house, which will contain two 1,000 kilowatt alternators, and also two 500 kilos, but the building will be capable of accommodating additional plant should it become necessary. Overhead travelling cranes will be provided for the shifting of the heavy machinery, should that at any time be necessary. Overlooking the engine house will be placed the switch room, a 50-foot apartment, which will be fitted with the Ferranti switch-board, and from here the cables will run direct to Fleet-street, which will cease to be a generating station, and become solely the distributing establishment, from which the current will be transmitted to the various parts of the city. At the rear of the engine house will be a block of buildings, which will contain the offices, stores, work-hops, test-rooms, accumulator-rooms, me-s-rooms for the staff, lavatories, etc., the old "hotel" being, as stated, retained to provide sleeping accommodation. The solid concrete foundations for the smoke shaft are completed quite close to the boiler house. The shaft will be of red brick, and will taper to a height of 186 feet. It will be octagonal in shape, and will measure, internally, 9 feet in diameter for its entire length. From its base to a height of some 65 feet it will be lined with fire-proof bricks. The plans provide for a possible extension of the buildings, and to this end a considerable space of ground is available immediately adjoining the boiler and engine houses, and on the immediate river side. The works at the Pigeon House are under the direction of Mr. Collard, C.E.

Dungarvan and Youghal.—The Town Clerk read the resolution from Youghal, which has been already several times published, in favour of the construction of a line of railway from Dungarvan to Youghal. The proposers say that this line would open up isolated inland agricultural districts, and assist in a very material manner in developing the deep sea fisheries on this part of the Irish coast.

Donegal.—Mr. Sweeney, in accordance with notice moved that £10, as recommended by the Pier Committee of Bartonport, be expended in clearing the bed of that harbour.

Greystones.—The Local Government Board forwarded for the information of the Council the accompanying extract from the Registrar's report to the Registrar-General for the quarter ending 30th ultimo, respecting the sanitary condition of the village of Greystones:—"The sanitary state of the village of Greystones is most dangerous to the public health. Many cases of diphtheria broke out among the visitors. The Local Government Board Inspector says—"I would strongly recommend that the main drainage system be carried out immediately. The state of Greystones is getting worse every year."

Kingstown.—The Committee appointed to consider the proposals of the British Schuckert Company in reference to the electric light scheme, reported that they had met on several occasions, and had much correspondence with Messrs Kincaid, Waller, and Manville with reference to the proposals submitted by the British Schuckert Company for the lighting of the Urban District by electricity. The committee regret, however, that the Company, having consulted with their Continental house regarding the matter, came to the conclusion that the only terms upon which

they could undertake the business would not be accepted by the Council, and that it would be to scarcely any purpose to incur further expense or to keep up further the time of the consulting engineers or the Council by a discussion of the subject.

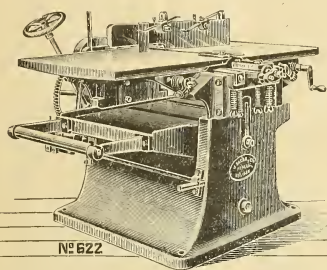
Limavady.—The Local Government Board wrote forwarding memorials that they had received protesting against the Urban Council acquiring a new site of ground for the proposed new cattle market, and the Board requested that the Council should furnish them with their observations on the matter. The memorialists stated that the making of a new market was an unnecessary expense.

Thurles.—PROPOSED WATER SUPPLY.—The Clerk read a letter from the Town Clerk, Dublin, stating—"I am directed by the Local Government Board for Ireland to acknowledge the receipt of your letter of the 2nd inst., enclosing a report and estimate furnished by Mr. Sheehy, C.E., in connection with the proposal of the Thurles Urban District Council to promote a scheme for the purpose of providing a water supply for the district. With regard to the estimated cost of the proposed scheme, namely, £5,250, the Board desire to call the attention of the Council to their available borrowing margin under section 238 (2) of the Public Health (Ireland) Act, 1878, which would appear to be under £3,000, and as far as the Board are aware the Council have not any other source from which they could obtain the balance requisite to carry out the scheme. In view of these facts the Council would not appear to be justified in incurring the costs of obtaining the provisional order intended, as the scheme is wholly outside their financial resources. The Council would do well to again consider whether they might not be able to procure plans for a smaller scheme, the cost of which would be within their borrowing limit. The Chairman said that the attention of the gas contractor should be called to the lighting of the town. There was a complaint made to him, and in his opinion the incandescent light was worse than the old light."

Waterford.—WATERWORKS CORPORATION.—The Town Clerk presented the estimate of waterworks income and expenditure.

THE LIGHTING OF THE CITY.—It will be seen that at the monthly meeting of the Corporation on 12th inst., Dr. O'Sullivan objected to the payment of £399 12s. 11d. to the Gas Company for a quarter's lighting of the city. He did so on perfectly legitimate grounds, namely, that the candle-power of the city lamps was not up to the standard agreed to. It transpired, however, that by deferring payment of this amount the Corporation would be mulcted in the £20 allowed as discount and the payment was allowed to pass.

PASSAGE SEWERAGE, ETC.—The following was read:—"Extract from minutes of the above Council meeting held 1st December, 1900.—A further report was received from Dr. Stephenson to-day, again drawing the attention of the Council to the urgent need for action in reference to the matter referred to in the foregoing correspondence. He pointed out that the sewerage scheme was perfect and one as could have been devised for Passage East. Owing, however, partly to the filthy habits of some of the inhabitants, who opened the traps and filled the pipes with solid matter, but owing chiefly to the fact that no caretaker was appointed to see after the scheme, the present terrible state of affairs has arisen." The following was read:—"Gentlemen.—In reply to the letter of the Local Government Board read at last meeting, we beg to state that during the summer months there was nothing in our districts calling for the attention of the Medical Officers of Health to report on. Any Public Health matters requiring attention, such as removing manure heaps, cleaning out premises, etc., were carried out by the occupiers at our request.—We remain respectfully, Joseph B. O'Shea, James Roche." The Local Government Board forwarded the following communication which they received from Mr. John Martin, relating to the chargeability of the expenses to be incurred in improving the Water Supply of Passage East:—"Passage East Public Health Act Committee.—To the Local Government Board, Dublin. Gentlemen,—I am directed by the above Committee at a special meeting held the 18th



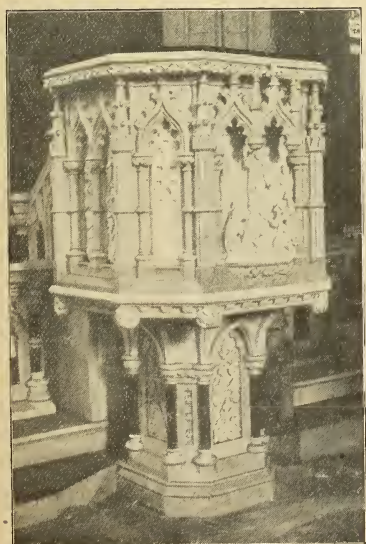
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October, 1901 (members present were Mr. John M. Meade, presided; Mr. John Kavanagh, Capt. Wm. Kelly, Messrs Michael Brown, Thomas Kennedy, Richard Flynn, Henry Kavanagh, Denis Lynch, and Richard Gough), to state to the Local Government Board that Passage East has for the past summer suffered great inconvenience for want of a supplemental domestic water supply. As the original supply has failed to supply the wants of the village, Mr. G. H. Jephson, Assistant County Surveyor, was employed by the local committee to prepare a specification and estimate for a supplemental domestic water supply, which would cost about £102, and after repeated applications to the Waterford Rural District Council No. 1, nothing has yet been done, and as the committee are of opinion that any new work for domestic water supply should be a district charge, and inasmuch as the people in Passage East and neighbourhood are compelled to pay their portion of rates for the erection of a pump at Ballyduff, which cost about £70 or £80, the committee would respectfully ask the Local Government Board to have this proposed supplemental domestic water supply a district charge also, and would refer you to the last quarterly report of Dr. E. F. Stephenson, Medical Officer of Health.—I am, gentlemen, your obedient servant, John Martin, Secretary to the Committee." It was decided to refer the Local Government Board to the Council's original resolution recommending that the area of charge for the proposed supplemental the original waterworks scheme. The Council shortly supply should be the division of Faithlegg, as it was for afterwards adjourned.



THE ARCHITECTURAL ASSOCIATION OF IRELAND.

At a general meeting of the Architectural Association of Ireland, Mr. T. E. Hudman presided. Mr. Anthony Scott, M.S.A., moved:—"That in the opinion of this meeting of the members of the Architectural Association of Ireland, the present system under which County Surveyors of Irish counties are permitted to engage in private practice constitutes a serious grievance and injury to the members of the allied professions of architecture and engineering; and that our secretary be directed to send copies of this resolution to the Chief Secretary and the Parliamentary representatives for the city and county of Dublin." He pointed out very forcibly that the County Surveyors were paid salaries ranging from £500 to £1,000 a year, and had a great deal of official work to do. They were placed in an unfairly favoured position to secure private work. He considered that the present state of affairs was an injustice to private practitioners and to the ratepayers also, because the latter paid a salary which ought to secure to them the entire services of the County Surveyors.

Mr. R. M. Butler, in seconding the resolution, said he thoroughly agreed with all Mr. Scott had said, and he believed the time had come for the Association to seriously take up the matter. He also suggested that the Associa-

tion should appoint a small committee to deal with the matter, and moved to add a clause to this effect to Mr. Scott's motion, which was accepted by Mr. Scott, and the motion in its amended form passed unanimously.

In another column we publish the paper read by Mr. W. Johnston-Roberts, Solicitor, and entitled "Some Law Points for Architects." The paper was described by one of the speakers at the meeting as the most instructive ever read before the Association.

THE ROYAL INSTITUTE OF THE ARCHITECTS, OF IRELAND.

A general meeting of the members of the Royal Institute of the Architects of Ireland was held at the Institute Rooms, 20 Lincoln-place, Dublin, on Monday, November 4th, at 3.30 p.m. The chair was taken by the President, Sir Thomas Drew, P.H.R.A., F.R.I.B.A. There were also present—C. A. Owen, J. J. O'Callaghan, R. Caulfield Orpen, Robert J. Stirling, James H. Webb, Frederick Batchelor, William M. Mitchell, Thomas A. Coleman, Joseph Holloway, Charles H. Ashworth, J. F. Delaney, and W. Kaye Parry, hon. secretary. An apology for non-attendance was read from Mr. Henry Seaver.

The ballot papers for the election of a President for the next three years were opened and examined, and the Chairman announced that Mr. George C. Ashlin, R.H.A., F.R.I.B.A., was duly elected.

Subsequently the ballot papers of candidates for membership of the Institute were examined, and the following architects were declared duly elected:—Mr. John Barrett Robinson, Belfast; Mr. William Blackwood, Belfast; Mr. Frederick Shaw, Drogheda; Mr. Percy Morgan Jury, Belfast.

Some slight alterations in the bye-laws of the Ulster Society of Architects, which is affiliated with the Royal Institute, were considered and approved of, and the proceedings terminated.

TRADE JOTTINGS.

A Stained Glass Window to the memory of the late W. J. Foster has just been erected in Portrush Protestant Church, the subject represented being that of the "Good Shepherd," and is enclosed within enriched canopied work of late 16th century description. The window is of rich and harmonious colouring and high artistic merit, and was executed by Ward and Partners, the stained-glass artists, of Belfast.

Messrs. Pearse & Sons, of 27 Great Brunswick-street, have secured the order for the High Altar for the Roman Catholic Chapel attached to the Castlebar District Asylum. The altar, which will be in Caen stone, Sicilian, Galway green, and Cork red, marbles, is from Messrs. Pearse's own designs, and will be carried out under the supervision of Mr. E. K. Dixon, M.Inst. C.E., County Surveyor for South Mayo. Messrs. Pearse and Sons have also secured the order for a new Communion railing, in Sicilian and coloured marbles, for the R.C. Church, Rowe-street, Wexford. Mr. J. Kelly Freeman, Dublin, is the architect.

Lead Down-spouts at St. Paul's.—At St. Paul's Cathedral, the workmen have taken down, repaired, and re-fitted one of the large and heavy original lead water-pipes which Sir Christopher Wren placed in shafts constructed within the massive walls of the building. The walls are in some places no less than 20 feet thick, and Wren made in them a series of shafts, 3 inches by 2 inches in size, the primary purpose of which was to carry off the rain-water from the roof. With this object he placed large leaden pipes 8 inches square in the shafts, reaching from the roof right down to the crypt; and it is one of these which has been taken down, repaired, and replaced—no slight task, when the size and length and weight are considered. The shafts are also fitted with step-irons, so that men can ascend from their workshops in odd corners of the crypt, up to the roof, without rearing a ladder outside.—*Building News.*

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A GREAT IRISH ENTERPRISE.

THE DUBLIN UNITED TRAMWAYS COMPANY.

If in Ireland we have few industrial successes to point to, if our textile, mechanical, and other productive enterprises are in a languishing state, if factories are few and far between, we can at least point to one or two commercial successes of no mean order. It is hard to pronounce if the unqualified success of our great breweries and distilleries is, or is not, a thing to be proud of, but this remains, at all events, the City of Dublin has every reason to be proud of possessing the most complete and up-to-date system of electrical street traction in the British Empire—namely, the Dublin United Tramways Company's System.

The Dublin Tramways Company has to-day a system having 80 miles of permanent way, electric plant, capable of an output equal to 6,000 h.p., with a normal working arrangement of some 240 cars, frequently rising to as many as 280.

Probably many Irishmen would ask themselves, "How on earth, comes it that we in Dublin, backward conservative Dublin, stand so pre-eminent in British electrical street traction. Who is responsible for the introduction of such a novelty?" Some people may smile at such words of disparagement, but look at Ireland to-day. How slow we are to adopt new methods—how obstinately we refuse to show enterprise; how securely locked up in unproductive investment is much of the country's capital. How have we not neglected many natural advantages—our beautiful pleasure resorts undeveloped, the natural products of the country too often untouched. With these reflections before us it becomes a pleasure to turn to an example of successful enterprise.

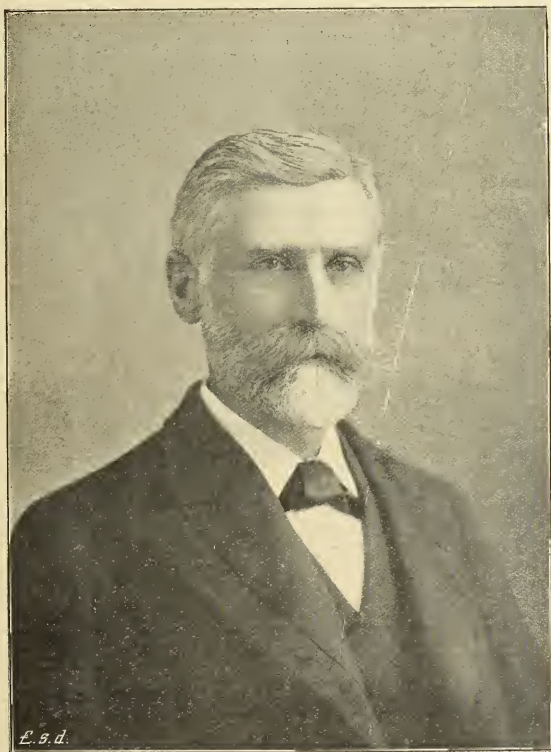
The Dublin Tramways Company was started in 1872, and

rapidly became a recognised institution in the metropolis. The original promoters of the company were Mr. Barrington, of Dublin, and others; and about 1880 a very great improvement in the cars was made.

The old horse cars, inferior as they were to the splendid system of the present day, were, in their time, amongst the best cars in the Kingdom.

Mail cars, busses, and long cars were a great feature of old-time Dublin life; for the "Car-drivingest City in Europe" was ever partial to methods of equine locomotion. A great sight in old times was to witness the long line

of mail coaches and cars starting of an evening from the G.P.O. in Sackville Street, bright with gay colours, shining lamps, well-polished harness, and the guard with his horn, completed a scene not wanting in the element of the picturesque. Not infrequently a couple of well-armed dragoons attended the coach. A significant reminder, indeed. The coaches lingered long, as did the "long cars," for in the early eighties the long car to Blessington and the mail coach to Ballyglass were still running. The new branch line of the G. S. and W. Railway caused the latter to cease running in 1883. In the adoption of electrical energy Ireland has borne a rather pioneer part. The first system of electric traction in the United Kingdom was the Light Railway from Portrush to the Giant's Causeway, and the obscure little town of Carlow was the first in the Kingdom



Mr. WILLIAM MURPHY, J.P.
Chairman of the Board of Directors.

to adopt electric lighting, while the City of Dublin, so far back as 1880, carried out an electric lighting scheme for several of the chief streets. For unexplained causes this tentative scheme was abandoned after a few months' trial, and it was not until 1897 that Dublin boasted a system of electric lighting, now undergoing reconstruction, and, at the present time, still the subject of much adverse criticism.

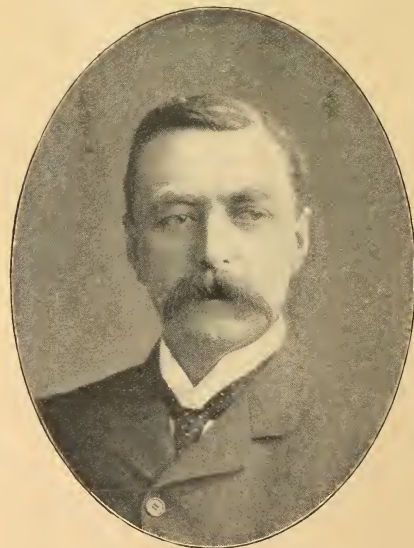
In 1897 the present Chairman of the Dublin Tramways Company, Mr. William M. Murphy, J.P., then one of the

Members of Parliament for the City of Dublin saw that the day of street car traction had passed. Mr. Murphy, ably aided by Mr. Anderson, perceived the possibilities of electrical



Mr. WILLIAM ANDERSON.
Director of the Company and Ex-Secretary.

energy; they knew what progress had been made in the United States; they saw that here was the system for Dublin. It is to Mr. Murphy that in the main the citizens owe the present magnificent tramway service.



Mr. R. S. TRESILIAN.
Secretary of the Company.

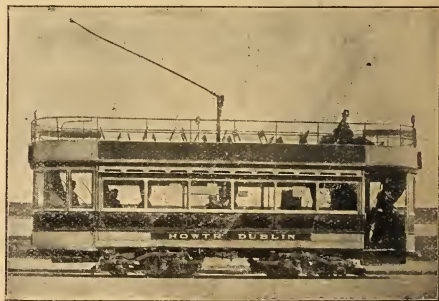
In all his efforts Mr. Murphy was ably seconded by the then Secretary, Mr. Wm. Anderson, J.P., now a member of

the Board of Directors, and by the present able and energetic Secretary, Mr. Tresilian. On this triumvirate fell much of the hard work of the initial stages in the inauguration of the present system of electric cars, second to none in Europe. Glasgow claims to be able to develop a greater horse power, as measured in units, but the actual working of the Dublin system is far more extensive.



Mr. D. W. MORRIS,
Who has done all Quantity Surveying for the big undertaking of the Dublin Tramways Co.

The Dublin tramways are worked from a central power station situate on the Ringsend-road, not far from Victoria Bridge. It is a large new red brick building of some pretensions to architectural merit, erected from the designs of Mr. H. F. Parshall, of Westminster, the company's consulting engineer, who is responsible for the design of the whole of the present extensive system and power generation works. Entering the building, the first thing that strikes one is the cleanliness, absence of noise and turmoil usually associated with the works of any great industry. The whole is orderly and neat, few men are to be seen about, and the only



A Typical Dublin Tram Car.

movement is the unceasing throb of the great engines generating the enormous power requisite.

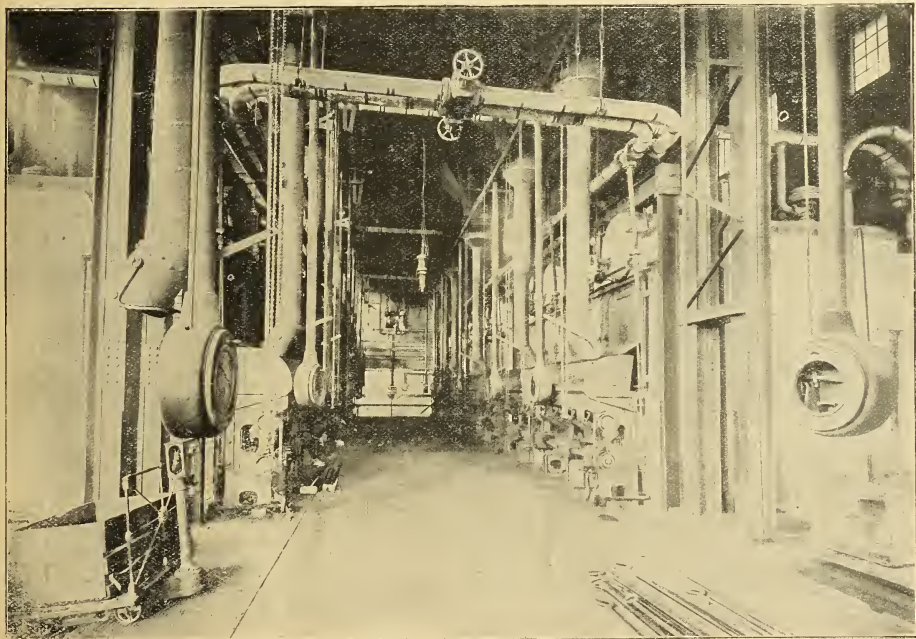
Our thanks are due to the courteous secretary of the company, Mr. Tresilian, and the superintendent, Mr. Towle, for permission to go through the works, and also to our

contemporary, the *Electrician*, for liberty to publish accompanying illustrations of the works, and for certain particulars relating thereto. Likewise to our contemporary, *L. S. & A.*, for permission to publish the portraits of Messrs. Murphy and Anderson. The main system of the Dublin United Tramways Company has been running now nearly two years, and several important extension works have already been carried out.

The company obtained powers for the electrical working of their tramways in 1897. At that time they owned two lines, which were operated electrically—namely, the Clontarf line, worked from a station at Dollymount, and the Haddington-road to Dalkey line (about eight miles long), worked from a station at Ball's Bridge, and, as before mentioned, purchased from the Dublin Southern Districts Tramways Company. The total length of permanent way is 50 miles, and the length of single track 89 miles. The generating station is at Ringsend, with sub-stations at Blackrock, Dalkey, and Clontarf. About 40 miles of the system is supplied with current direct from the central station.

chimneys," as they have been flippantly called), with their concrete foundations, were erected complete in something like three months!

The coal-handling apparatus is of a most up-to-date and wonderful time-saving character. Briefly, it consists of a hoisting tower and grab, the capacity of the grab being $1\frac{1}{2}$ tons. The apparatus is capable of handling 40 tons per hour continuously. The coal vessels come alongside the tower on the edge of the dock. The coal is hoisted into a hopper on the tower, from which it is emptied into a truck. The coal is first weighed, and then conveyed along an elevated track, running from the hoisting tower over a coal bunker of a storage capacity of 800 tons, the track being inclined towards the bunkers, so that the truck runs down, and is made to discharge itself by a tripping device; the empty truck, after being discharged, is then returned to the hoisting tower by means of a balance weight. The central part of the boiler-house has an overhead series of coal bunkers of a capacity of 1,500 tons. The coal is conveyed to these bunkers from the outside store by means of



THE FURNACES.

Shewing the wonderful Automatic Stoking Gear, which brings the fuel direct from the hold of the ship and puts in on the fires.

The power station is erected on a large piece of ground giving ample room for future extension, adjacent to the Grand Canal Dock, from which water is obtained, and by which coal and other supplies are brought into the station. The building is a steel structure, resting on concrete foundations, and cased in with brick. The total weight of steel used in the building, including columns, girders, coal bunkers, trams, &c., was 700 tons. The brickwork was not begun until the whole of the steel skeleton framework was fitted together.

One of the chief features of the station is the pair of steel chimney shafts, each 200 feet high, built up in sections. These shafts were brought over ready for erection in sections, and so accurately were they fitted that, notwithstanding the enormous number of rivets required to piece and secure the drums together, not a single bolt or rivet-hole had to be re-tapped—surely a marvellous triumph of accurate fitting. Moreover, these great steel shafts ("tin

a gravity bucket conveyor. The conveyor runs underneath the outside bunkers. The conveyor consists of 220 buckets, the total delivery capacity being 50 tons per hour.

The whole of this arrangement is one of the most wonderful things about the station. It is absolutely automatic from the moment the coal leaves the ship. Until it is emptied on the fires, it is untouched by human hands. The whole stoking, too, is self-acting, being set in motion by one attendant touching a lever.

The entire working staff consists of only about 60 men, divided into shifts of 20 each.

The power is directly generated by six large dynamos, each of about 2,000 horse-power.

A great feature of the engine room is the immense switchboard supplied by the British Thompson-Houston Company, and placed on a gallery at the end of the room. The whole of the central system is controlled from this great switchboard, which occupies nearly the whole end of the room.

A noticeable thing, too, is the almost entire absence of vibration and noise. Order, cleanliness, and quiet are the all-pervading features of the station.

The wiring system used for the transmission of power is the overhead trolley system, the trolley wire being supported from span wires, side poles, and centre poles, according to circumstances. The cables are paper insulated and lead covered, and are drawn into cement-line ducts, with man-holes every 300 feet apart.

The cars are of what is known as the "double-deck" pattern, and have been mostly built by the company itself. Our illustration gives a good idea of a typical car. A few cars were supplied by Messrs. Milnes and Co. and by the British Thompson-Houston Company.

The Howth cars, which are the largest used on the system, each accommodate 68 passengers.

The installation of this great system involved an immense quantity of builders' work, including the reconstruction of Victoria Bridge, Great Brunswick-street. The contractors

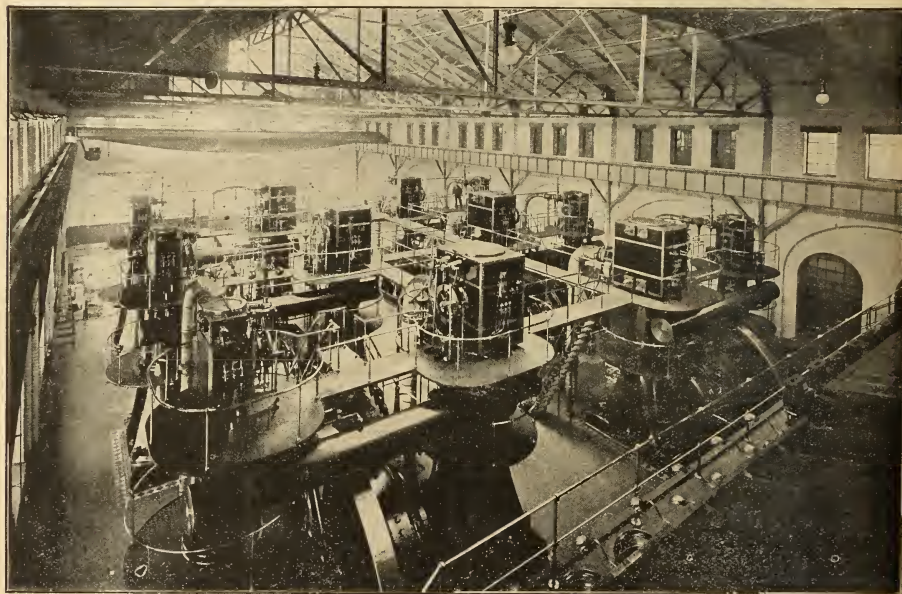
SOCIETY OF ARCHITECTS.

On the 28th November Mr. Silvanus Trevail, F.R.I.B.A., delivered his Presidential Address for 1901-2. In the course of his remarks he said:—

There are three great bodies that more or less represent the architectural profession. The first in point of seniority and membership is without doubt the Royal Institute, which we may deem to be the academic body, and towards which we cannot for a single moment allow ourselves to be unfriendly or jealous.

Because the Royal Institute was not thought to be alert enough in the past upon these and kindred subjects affecting the well-being of the profession, the Society of Architects was established, perhaps to remind them what architects outside of their own particular circle really wanted.

When the Royal Institute rises to the privileges conferred by its exalted position, it may, I think, always rely upon the loyal and unflinching support of this body. In fact, from



General View of the Power House.

for the bulk of the building work were Mr. Samuel Worthington and Messrs. H. and J. Martin, Limited. The whole of the onerous and responsible work of measuring and taking out the quantities for this work was entrusted to Mr. Denis W. Morris, the company's surveyor, the designs being prepared by Mr. Parshall.

The immediate supervision of the building works was in the hands of Mr. Daniel Murphy, Clerk of the Works.

The welfare of the employees has been admirably looked after. For Mr. Towle and his staff at the Power Station there has been provided a commodious suite of lightsome, airy offices, with ample and convenient bathrooms and lavatories on the most liberal scale.

For the workpeople employed as conductors, motor men, etc., the company has built at Clonskeagh, Dollymount, and elsewhere, numbers of comfortable roomy cottages, which are let at most reasonable rents.

There are about 1,200 men employed by the company.

In concluding our brief notice of these works, we must again make acknowledgment of the courtesy of Mr. Towle, and the interest and trouble he took in describing to us the innumerable interesting features of the Station.

beginning to end in the Registration movement supported by our Society, the Institute has always been placed in the forefront position as representing the profession.

ARCHITECTS SHOULD BE QUALIFIED.

We say that architects should be properly qualified, and registered, before being allowed to practise, as are parsons, lawyers, doctors, chemists, and even surgeon-dentists; though, with the exception, perhaps, of doctors, the opportunities of either of these professions for "killing" are far less than are those of the charlatan architect.

We were, and are, quite prepared for the Royal Institute to be made by law the examining authority for professional qualification, and with adequate representation of the profession generally to say who shall or shall not be registered as architects who may practise the calling. We cannot, therefore, understand the opposition there has been in the past to registration from that quarter. But we are pleased to observe that so lately as November last Mr. Wm. Emerson, in his presidential address, spoke most vigorously on the subject, showing the necessity there was for the proper qualification and registration of architects, urging the In-

stitute to follow on the lines of the Incorporated Law Society with regard to solicitors, which makes it impossible for the latter to practise as solicitors without diploma and registration. After this, where is the fault that this society has committed in being the pioneers to press the matter to the front? Next we have the subject of "ancient lights." After this Society had promulgated a programme, and obtained an interview with the Lord Chancellor, our seniors, together with the Surveyors' Institute, took the matter up, and succeeded in drafting proposals that would, if carried out, be the means of substituting one tribunal for another, with little chance of either lessening the expenses of reference or facilitating a settlement previous to the commencement of building operations. Still, the Royal Institute is now making some movement upon such questions, and we take the liberty of sincerely congratulating it upon the fact.

ARCHITECTURAL ASSOCIATION.

Next comes the Architectural Association that is doing a most useful work as an educational body for the special training of the rising generation of architects, and to whom, as the steadfast advocates of educational qualifications ourselves, we cannot but wish the greatest possible success. It is a real pleasure to look back over the past records of work accomplished by the Association, and the disinterested efforts put forward so nobly by so many distinguished members of our profession, that have their influence upon British architecture to-day, and will have for the ages yet to come.

THE SOCIETY.

Then comes the Society represented to-night by ourselves, that may be regarded as the body that has been primarily formed to look after the business side of the profession, whilst not ignoring the educational, the scientific, or the artistic. Established in 1884, it has had a vigorous growth to have attained the numerical and financial position it occupies to-day, as well as being able to make itself felt upon questions of the hour that affect either the architectural profession or the various trades allied with building operations.

BUSINESS ASPECTS.

It is to this business side or aspect of our Society that I purpose to address myself mainly to-night, as being what I conceive to be more in accord with the wishes of my professional brethren, especially those in the provinces, who suffer in a greater degree than do those in the metropolis and larger provincial cities from the neglect of the central architectural bodies in taking up practical matters that affect the every-day life of the provincial practitioner.

In London, and in the larger centres, the position of an architect is better defined and understood, his qualifications, his executed works, and his professional status are recognised. In smaller places these points do not appear to have the same weight, and in too many instances the qualified architect stands simply on a parity in the public mind with another calling himself by the same name, regardless of the relative qualifications of the two men, and particularly so if the charlatan offers to do the job at an inclusive fee that may on the face of it appear to be much below the recognised professional rate.

COUNTY OR DISTRICT SURVEYORS AND A SCANDALOUS ABUSE.

Instances of wholesale plagiarism, and abuse of the term "architect," come almost daily under the observation of country practitioners, that would simply be regarded as incredible and could have no existence in our larger centres through the different conditions that obtain there.

I regret to say that from various examples that have been brought to my notice the local district surveyor's office in small provincial towns is frequently made the medium for plagiarism of the most impudent description. Plans and sections of new buildings have to be deposited in accordance with the provisions of the local bye-laws. The local council, acting upon the recommendation of their surveyor, issue a notice to the effect that these must be in duplicate, one set to be retained by the authority, and the other for stamping and return. But latterly, elevations as well as plans and sections have been required, with the result that complete sets of drawings, minus the details, are in the archives of the surveyor and his batch of assistants, so that they have a complete record of all the work done in that particular town or district.

HOW IT IS DONE!

Soon we see the effect. Mr. A. builds a residence in the locality from designs furnished by a London or other distant architect of recognised standing. Afterwards Mr. B. wants a house, and likes the style of Mr. A.'s residence. It is known locally Mr. B. is about to build, when he is visited by either the local surveyor or some member of his staff with the plausible intimation that if Mr. B. wants a residence like Mr. A.'s, everything can be done for him in the "office" much more expeditiously, and better than can be the case from a distance, at a cheaper rate, and with the certainty of the plans passing the authority without revision or delay! The result, of course, being that the surveyor or his assistant gets the instruction to proceed, and forthwith does so by providing himself with the necessary sheets of tracing paper or linen, copying the deposited plans in his possession, after making such trifling modifications as the altered conditions of the site or other requirements may necessitate.

Of course, I am aware that such a state of things could not for a moment exist in the metropolis (London), or in our larger municipalities, where district surveyors have something else to do and would scorn such practices; but they do exist to an extraordinary extent in our smaller ones, and scarcely a week passes but complaint comes from one architect or another of abuses of this sort, and so much so that I have been requested to call attention to the matter in this address.

THE GREATER MEN

Possibly the greater men in the profession do not suffer to the same extent as the smaller ones, because their work is usually not of what may be deemed the ordinary character. Still they do suffer, and to a far greater extent than they are conscious of. But seeing that all cannot be engaged upon large and extraordinary works, and that the average practitioner has to live by what is mostly in demand around him, and that it is the status and well-being of these that this Society wishes particularly to protect, it appears to me that here is a subject that may well demand its attention.

All local surveyors and their assistants should be debarred from practice as "architects" as a condition of their appointment; at any rate within the areas over which they have adjudicatory powers. Such an abuse as I have outlined would be tolerated in no other profession, and the model bye-laws of the Local Government Board were never intended as an instrument for the fostering of any such contemptible practices.

CHARLATANS.

But the class I have mentioned have some knowledge of architectural work, and certainly of drainage and sanitary matters, and, with this, possibly greater excuse for "dabbling" than other examples that have come under my notice, where board schoolmasters, builders' clerks, auctioneers, land agents, general contractors, clerks of works, boys from the nearest art school, photographers, highway surveyors, and in one instance a marine store dealer, have signed themselves as "architects," and submitted plans to local authorities, and otherwise acted as professional advisers to their clients. With such absurdly unpractical drawings as is the natural products from such sources, something generally happens either during the progress of the building or afterwards, when the fault is, of course, the "architect's," and our profession as a body gets stigmatised for the monstrosity created or the *mélée* in the law court, when any recognised member of it has had about as much to do with the unsatisfactory business as the "man in the moon."

(To be continued.)

—o—

From statistics published in *Engineering* it appears that the average increase in the length of railways throughout the world is about 11,000 miles per annum. Of the 44,570 miles added to the world's railways during the past four years, 9,000 have been constructed in Asia, while British India added 3,020; Japan, 1,395; and China, 180 miles. The cost per mile of constructing railways in England, according to the same authority, is greater than in any other European country.

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NOTICE.

The subscription to the "*Irish Builder*" is now reduced to 4-pence annum (postage paid). Subscriptions are payable in advance and we shall feel obliged if subscribers will kindly forward renewals to 11 Lower Sackville Street, Dublin. Subscribers can also assist by mentioning the paper, especially when corresponding with advertisers, and bring it under the notice of friends likely to subscribe.

VOL XLIII.

DECEMBER 19, 1901.

No. 1007

THE DEPARTMENT OF AGRICULTURE AND TECHNICAL EDUCATION FOR IRELAND.

This Department has issued a circular to the managers and head teachers of secondary schools explanatory of their regulations for the administration and distribution of grants in experimental science, drawing, manual instruction, and household economy, many details of which are of almost equal interest to the general public, who seem to have rather hazy notions as to the real scope and value of properly organised technical education. Much of the circular is taken up with the qualifications of teachers, and it is gratifying to note that while the Department is slow in interfering with teachers who have successfully taught technical subjects for a considerable time, they will in future insist on a teacher holding the recognised certificate of competency, theoretical and practical, before sanctioning his appointment. This is a guarantee of the quality of the instruction, and will be warmly welcomed by all true friends of education. While on this subject, one is tempted to draw attention to the fact that the class of secondary teachers whose duty it is to give the education demanded by the Department are without permanency in their positions, progressive increase of salary, expectation of retiring pension, or any of those advantages to which their position, under the Department, seems to entitle them. To regard the position of the teacher as a public matter is only just to the public themselves, for if permanent positions are created for the teachers many of the best of the class are lost to the profession, and the public lose the result of their experience—a grave loss, especially in the case of Ireland, where the attempt at technical education is in its almost helpless infancy. The circular next deals with the details of their programme, which, we are informed, has been adopted by the Intermediate Education Board for Ireland. In the whole of this admirable programme the object in view is the introduction of the scientific method of science teaching as a means of mental discipline, so that text books are practically done away with. The student must collect facts and determine how they are related to each other, and construct and test hypotheses to account for facts. This is excellent, but is it well to depend on judgment where the judgment has not yet been developed by maturity, and almost completely ignore the memory, which, in the young, is a most powerful factor in attaining knowledge? This article does not pretend to discuss methods of teaching, but surely keeping a class together and not allowing individuals to "go on" as recommended, seems to have a smack of the trades union idea about it—viz., that the quantity of work which the slowest man is capable of or willing to do, is as much as should be required of the most proficient. In the Manual Instruction the object aimed at is not technical, but educational, "not the knowledge of a craft, nor the acquisition of manual skill (though even the skill required will not be

without its practical advantages), but intellectual and moral training." The intrinsic value of manual training is that in this subject, more than in any other, the pupil realises the sense of individuality in his work, and this is more true the less expensive the tools and the less the machinery. This is only a brief outline of the admirable work proposed by the Department, and it will be readily seen that it is thoroughly practical in its character, and thoroughly educational as far as the science goes, and we almost wish that neglect of the study of household economy, which the Board provides for, could be made a penal offence with women.

P. J. O'CONNOR, B.A.

A New Irish Marble Quarry.

THE great impetus which Irish arts and crafts have received during recent years has directed attention to the great extent of unutilised mineral resources that this country abounds in. It is agreeable to notice that Irish marbles and granites are now becoming fairly well known, and used, both in England and America, but not to anything like the extent they ought to be. The apathy of the owners of quarries and the prohibitive railway rates have combined to handicap quarrying in Ireland for export. There is no reason why this should be so. It only requires enterprise and co-operation to utilise these great latent national resources of the country to the full.

Writing in this connection, we are glad to say that Mr. James Cotter, builder, Castlebar, who has until recently been the capable and energetic clerk of the works at the large new church there, and is now engaged in the same capacity at the District Asylum, has located more than one undeveloped quarry of very choice marbles, which, if properly developed and taken up by the public, should prove a successful industry. We understand that Mr. Cotter proposes to exhibit worked specimens of these marbles at the Cork Exhibition, and at the exhibition of local industries which the Countess of Lucan has arranged to open in Castlebar during next summer. Later we hope to put some further particulars relating to this project before our readers.

THE "GO-EASY" WORKMAN.

EARL GREY'S INDICTMENT OF TRADE UNIONISM.

The discussion of the attitude of trade unions towards the "go-easy" principle, which is alleged to obtain in certain trades, has received an impetus from a strong speech by Earl Grey, who says he believes that the crisis in British industry is largely caused by restriction of output.

Speaking at Bolsover, in Derbyshire, Earl Grey declared that we could not hope to be a great country if our industrial system was based on dishonesty, and he called it nothing but dishonesty if a man was resolved to see how little he could do in return for the wages he received.

"It is absolutely untrue to say that the 'go-easy' principle is generally advocated by trade unions," said Mr. W. C. Steadman, the chairman of the Parliamentary Committee of the Trade Union Congress, recently. "I defy Earl Grey to point to a single trade union, or leading trade unionist, advocating the restriction of output. The bricklayers and the boiler-makers are the only trades against which this charge has been brought by the *Times*, and they are capable of replying for themselves. The only occasion when I remember any trade union leader advocating restriction of work was in the dock dispute of a few years ago. Mr. Tom Mann advocated it then, and it was not adopted. We do not believe in 'ca' canny,' as the Scotch call it."

Mr. G. N. Barnes, the secretary of the Amalgamated Society of Engineers, was equally emphatic. "Trade unionists believe in a fair day's work for a fair day's wage," he said. The strongest point that had been made in this attack on trade unions was, he said, the quotation from a building union rule advocating restriction. But it turned out that that rule was thirty years old, probably older. Restriction was not advocated by trade unions to-day.

CORRESPONDENCE.

WATER-POWER IN IRELAND.

TO THE EDITOR OF THE "IRISH BUILDER."

SIR.—In your issue of November the 21st you do me the honour of referring to my article on "Electric Light and Water-power," which you were so kind as to publish. I am sorry that you think I take a roseate view of the possibilities of Irish water-power, because I had hoped to convert you to my view that there was large power in suitable places going to waste unutilised. The interesting excerpt which you reprinted from your contemporary, the *American Architect*, shows a keen appreciation of the beautiful, but, I fear, an ignorance of the conditions of water-power in this country. Unfortunately, we have no 1,000 horse-power cascades going to waste, nor is the position of the power or powers to which I referred those that are found in inaccessible districts. As a matter of fact, I referred more particularly to those powers that at the present moment are situated near railway communication or in the middle of towns, which have both water and rail. One single instance will suffice. Turn your face to Galway, the "City of the Tribes," and through its streets run great water-power, and on the banks of this channel what do you see? Derelict mills whose business has been ruined, and their trade destroyed by the American, who now wishes to throw cold water on such enterprises as may revive the industries and the departed prosperity of those old industrial centres. I don't think I need pursue the point further, because there are two illustrations in their own country that belie their statement. One is the Niagara works; the other, and probably greater, is the St. Laurence Power Co., where, by the way, they had to get a British engineer to deal with it. So much for these points.

The last point I would make to this statement, evidently made without high authority, that the value of the power generated from water is of very little value, when the owner comes to compare the cost of repairs to turbine, etc. Of course, in saying this I am absolutely unaware of what class of turbine they use in America, or the workmanship whereby it is set or regulated; but I do know in this country, where we British build turbines, and know how to deal with them, the cost of repairs are practically nothing at the end of the year, unless gross negligence or maliciousness has hampered their working. Trusting you will forgive the length of this letter,—Yours, etc.,

H. T. HARRIS.

30 Parliament-street, Dublin,
December 9th, 1901.

BOOKS.

"THE GEORGIAN PERIOD." Published by the American Architect and Building News Company.

This publication, which now consists of eight parts, contains more than a hundred pages of text, illustrated by over three hundred text-cuts, and two hundred and ninety-seven full-page plates, of which one-third are gelatine or half-tone prints. It is in truth a work of superior excellence and great usefulness. There is a large quantity of measured and detailed drawings of cornices, ironwork, gateposts, windows, interior finish, ceiling decoration, capitals, etc., together with elevational and sectional views of entire buildings.

IRISH CONTRACTOR'S WILL.

Probate of the will dated January 12th, 1901, of Mr. Patk. Sheridan, of Anna Villa, Sutton, and of 23 Westland Row, Dublin, and of Eyre Street, Newbridge, Kildare, builder and contractor, who died on the 26th June last, leaving personal estate of the value of £34,572 1s. 2d., including £2,570 10s. in England, has been granted to his sons, Patrick and Edward, builders and contractors, and the testator bequeathed to his son Patrick, and to his daughters Ellen and Kate, and Agnes, £3,000 each; to his son Daniel, £500; to his nephew John Hayes, £500; and he left the residue of his property to his sons Patrick, and Edward, and Martin.

THE USES OF PERSPECTIVE.

To judge by the large proportion of perspective, as opposed to geometric, drawings, which are published in the professional papers, it would appear that architects and their assistants spend a good deal of time in making perspective representations of the buildings which they design, and the inquiry is natural as to what is the good of it all. In the following remarks I hope to be able to point out some of the advantages and uses of perspective drawings.

A capable designer can realise how his building will appear when completed, but many, feeling their uncertainty even in the finished elevations, find perspective drawings very helpful in the complete realisation of their ideas—indeed, many architects design in perspective rather than in elevations, and I have known architects of repute alter features, and make additions to important buildings, when set up in perspective, and there are few who will not recognise demerits in a correctly set-out perspective which would pass unobserved in a geometrical drawing.

Projections such as "bay windows," "breaks in the wall surface," "Oriels," etc., are lost in elevation; and even when shading is used it never has a satisfactory result. The importance of showing these things to advantage is obvious when submitting designs to the average "Competition Committee" or the average "client" (who often cannot enter the merits of a design in plan, section, and elevations), perspective is not to be ignored in these cases, and a well-prepared drawing appeals at once and is intelligible.

It is scarcely possible to dispense with the rough perspective sketch of the first ideas for a proposed building, and in preliminary sketches a perspective view taken from the plan would serve the place of elevations, and, at the same time, give a more correct and general idea of the design, as it would show two elevations at once, as well as all projection, would appear.

Another and recognised use occurs when geometric drawings have been submitted for the first time to a client, who is undecided whether to proceed with the work, abandon the idea, or defer the matter. A perspective sketch often brings things to a satisfactory climax, and the work proceeds. The sketch need not be expensive, as it will serve its purpose if only in pencil.

Then there are competition perspectives. If the first two designs in a competition are of equal merit (in plans, elevations, sections, etc.), but one has a perspective and the other has not, the former will invariably win—in fact, it is not safe to send in for a competition without a perspective. Committees usually expect to see one, and such a view is often included in the list of drawings to be sent in. One Competition Committee recently required four perspectives, two interior, and two exterior, and no elevations. This is a large and costly order, and one which considerably reduces the number of competitors.

Perspectives are also used for exhibition purposes, in which the Royal Academy takes the lead. The fact that this institution exhibits a large number of perspectives every year shows that their "artistic merit" claims some attention. Perspectives, in fact, may be designs just as much as pictures with landscape or figure subjects. Exhibitions of this sort are useful in showing the prevailing tendency in architectural style, but it is difficult to separate this class of drawings from the advertisement class.

When reproduced perspectives may be used for a variety of purposes, and single reproductions of a proposed new building accompanied by an appeal for funds, are often circulated amongst the congregation of a church or chapel, or the subscribers to a hospital. The improvement of late years in the various processes of reproduction has increased the value of drawings, especially wash drawings, which are admirably adapted for reproduction.

C. HENZELL-ASCROFT.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and in particular, Students, by answering inquiries in these columns and affording any information in our power.]

A.—We have not got rules for professional practice and charges of architects, but you can obtain them by applying to the Secretary, R.I.A.I., 20 Lincoln-place, Dublin.

ASSOCIATION OF MASTER PAINTERS IN IRELAND.

COMING CONVENTION AND EXHIBITION.

Our readers will be interested to learn that the Association of Master Painters has made arrangements to hold a convention and exhibition in Dublin early in January next.

The Convention and Exhibition will include—(1) A loan collection of drawings by the leading British decorators; (2) an exhibition of decorative materials; (3) a series of meetings, as which papers will be read and discussed; (4) a competition open to apprentices, in which will be shown some of the results that have followed the efforts which for some time past have been most earnestly made to further the education of young decorators.

The general programme of the Convention is interesting and instructive, and possesses every element calculated to lead to success. The Council of the Royal Hibernian Academy has placed the Academy House in Lower Abbey-street, at the disposal of the Decorators' Association for the purpose of their exhibition.

Beginning on Tuesday, the 7th January, with a reception, followed by a business meeting, the Exhibition and Convention will be formally opened by His Excellency the Lord Lieutenant at 2.30 on Tuesday, the 8th. On the same day there will be a lecture by Thomas Cooke Trench, J.P., D.L., on "Celtic Ornament," on which Sir Thomas Drew, R.H.A., and Mr. G. C. Ashlin, R.H.A., will speak, followed by a lantern exhibition of "Celtic Ornament," by the Rev. Stanford Robinson, M.A. In the evening will be held the President's "at home."

Wednesday morning will be occupied by visits to places of interest in the city, and in the afternoon papers will be read by Mr. John Cantrell and by Mr. James Brennan, R.H.A., and discussions opened by Alderman Gibson, J.P.; Councillor Dobbie, Edinburgh; Colonel Bennett, Glasgow; and Mr. Barker, Leicester, winding up with a "Trade Talk," and distribution of prizes in the evening.

On Thursday there will be a "Trade Talk" at 10.30, after which a paper will be read by Mr. W. Scott Morton, London, on "Design and Commercialism," on which Mr. Jno. Scott, Glasgow, and Mr. J. F. Keatinge will speak; also papers on "L'Art Nouveau," by Messrs. J. G. Nairn, Dublin, and H. Morrow, Belfast, followed by a discussion opened by Mr. W. G. Sutherland, Manchester, and Mr. Alfred Thornton, Dublin. The annual dinner will be held in the evening.

Friday, the concluding day of the Convention, will be devoted to an excursion.

The proceedings which we thus briefly outline constitute a programme very attractive, not alone to the decorators themselves, but to all who are interested in the progress of decorative art. So great, indeed, has been the advance made in Great Britain of late that from being a byword and reproach in the domain of decorative art, England now holds a pre-eminent place, at least in the branch of domestic art of a simple, pleasing, and restful character, even if she has not yet attained to the masterly precision and artistic skill of the great French decorators, in dealing with great projects.

Besides this, the encouragement of the artistic instinct in the rising generation of decorators is an effort deserving of the very highest commendation by the general public, for from the decorators the taste of the public will, to a very great extent, take its tone, and that that tone may be a cultured one must be the hope of all who desire to see even the humblest homes characterised by a quality of artistic restfulness.

The Royal Institute of British Architects sends us the kalendar for 1901-2. The Brown Book again gives evidence of the continued growth and usefulness of the Institute, despite its somewhat conservative tradition and practices; but it must be said that one year book is like another, no effort being made to introduce a little freshness into the publication; consequently it is stale and uninteresting to the last degree. It is, seemingly, not worth while to include in the compilation a general report or abstract of the preceding year's work.

A.A.I. JOTTINGS.

Two meetings of the Design Club have been held, the attendances being respectively 9 and 7, and the organisation is one which promises to grow and prosper during the session. A nice room, with warm fire, and the comfortable "Institute" chairs, lends a dignity and sense of comfort to the proceedings, which are of the most informal and sociable nature possible. We want three or four more men who are really keen on the general improvement of design to attend regularly, in order to make the club of the greatest possible value. The next meeting will be held on Friday, the 20th inst., when there will be a discussion on the designs for the memorial to her late Majesty Queen Victoria, as illustrated in the building papers. There will also be a "time subject," selected by ballot, as usual.

OUR ILLUSTRATIONS.

DOLPHIN'S BARN METHODIST CHURCH.

In explanation of the plan of this church, I may say that it is designed as an auditorium "pure and simple." The seats are so arranged that, although the building is as broad as it is long, no person will be uncomfortably placed as regards an easy and uninterrupted view of the speaker, who will be placed in position marked X on plan. It will be seen that the shape of the building depends entirely upon the disposition of the seats. The upper portion is octagonal, the walls resting on arches springing from heavy stone corbels on the salient angles. The thrust of these arches is taken up by the walls of the projecting angular bays, which continue in the same line, thus forming a natural buttress.

The roof is constructed with steel principals, resting on each angle of octagon, and joined together in the centre by heavy steel rings at top and bottom, forming with the principals, as it were, a hollow ring post, which takes the framing for ventilating fleche.

An attempt is made, in the exterior, to imitate the character of some of the smaller brick churches in Northern Italy to such an extent as is consistent with local conditions, and the special circumstances of the case.

The building is now in course of erection, the contractor being Mr. John Pemberton, of Ranelagh-road, who is acting as foreman of works. The iron and steel work has been supplied by Messrs. J. and C. McLoughlin.

ROSCREA METHODIST CHURCH.

This building is not yet commenced. It will be very simple in character, as suited to a country district, and the means available. The material for facing and dressings will be a Tipperary limestone.

The illustration, as the building will be on a somewhat narrow site, shows the church only; but it is proposed to erect a lecture hall at the back of same.

Both these churches are from the designs of Mr. George F. Beckett, architect, Stephen's-green, Dublin.

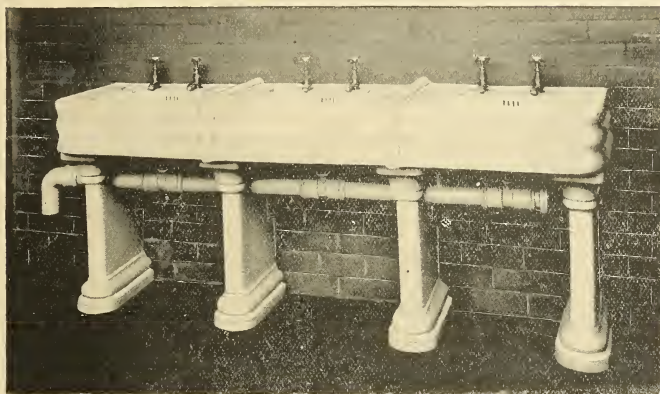
THE LUCKIE HORSESHOE FEAST AT EXETER.

It may be safely recorded that one of the most jovial gatherings in all the year in the West Country is Mr. Harry Hems's annual dinner to his staff in celebration of the finding of his lucky horseshoe upon his first arrival in Exeter from London. Saturday was the thirty-first anniversary of that fortunate event—fortunate maybe to the finder and to the city he has since made his home, for he has not only brought talented artists from afar as residents in its midst, but in wages alone has spent there considerably over a quarter of a million of money. Clever hands had formed one of the large studios into quite an ideal mediæval banquetting hall, and early in the evening exactly a hundred craft-men with a few invited guests, sat down to a splendid spread. Afterwards the loving cup, a trophy of Mr. Hems's prowess upon the cinder track more than forty years ago, went its round. The huge family punch bowls were filled and refilled, and the smoke from some five score "churchwarden" pipes formed nimbi around the heads of all present. Mr. Harry Hems occupied the chair, whilst the vice-chair was admirably filled by Mr. Greville C. Hems.

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Ballinora.—The Committee having charge of the erection of a memorial to the late Canon McCarthy, on Ballinacolly R. C. Church grounds, and of a tablet in Ballinora Church, invite tenders and designs for both. The material (either stone or marble) and workman-ship must be Irish. Height of memorial, 12 feet on a basement 18 inches high. Cost of memorial not to exceed £140; cost of tablet not to exceed £30. Messrs. John O'Connor, D.C., Carrigrohane, and Patrick Murphy, Ballinacolly, are the hon. secs.

Belfast.—New Physical Laboratory, Royal Belfast Academical Institution.—A new physical laboratory has just been completed at the Royal Belfast Academical Institution. Among the principal changes is the conversion of the house which was, until June last, occupied by Dr. Sheldon into new class-rooms. The new physical laboratory, which formerly was the ground floor of Dr. Sheldon's house, has been fitted up with all the most modern requirements and fittings. The floor is laid with oak wood blocks on a solid concrete foundation, the whole of which is insulated from the walls, as is also the special stone table. Adjoining the laboratory is the lecture hall. A raised platform has been constructed in this room, so that every pupil has an unimpaird view of the demonstration-table. The contractors were Messrs. McLaughlin and Harvey, and the architects Messrs. Blackwood and Jury.

A new Presbyterian Church at Belfast is in the Gothic style. The exterior of the church is of red brick, with red stone dressings. The interior is 60ft. long by 44ft. wide, and is lighted by windows grouped in pairs between each roof principal. The gable end is occupied by a pulpit of pitch-pine, with a panelled and cusped front. In front of this, at a lower level, is a platform, with choir stalls at the sides and open space in centre for communion. Behind the pulpit is an arched recess, in the tympanum of which is a triplet of windows placed high above the preacher. The seating is of selected pitch-pine. The roof principals are of pitch-pine, the spaces between are panelled in whitewood sheeting, and, as the ceiling is carried well up into the roof, the exposed principals, with their curved brackets and members, form a handsome and decorative ceiling. The artificial lighting is by electricity throughout. The lecture hall on the first floor is 44ft. long by 24ft. wide, and a large class-room at one end can be opened up to supplement the accommodation of the lecture hall by means of a sliding partition. The glazing of the outer windows is in leaded lights of handsome design. The windows of the lecture hall on the first floor have stone mullions, with cusped and arched filling pieces of stone. The cost is estimated to be about £4,000.

The new Church of St. Silas, Old Park Road, has been dedicated. Mr. Thomas Roe was the architect, and the contractors Messrs. Campbell and Lowry.

Blackrock (Co. Dublin).—Yesterday the Rathdown Board of Guardians received tenders for certain alterations and repairs to the Blackrock Dispensary, situated at Newtown Avenue, Blackrock, in accordance with the plans and specification prepared by Mr. P. F. Comber, M. Inst. C.E., 19 Lower Leeson Street, Dublin.

The Urban District Council of Blackrock, near Dublin, have adopted two schemes for workmen's dwellings, which are estimated to cost over £24,600. The District Surveyor has prepared the plans.

Carlow.—The R. C. CHAPEL.—There were tenders from the following contractors: Mr. P. Hanway, 26 George's-street, Dublin, £2,205 6s. 6d., with an allowance of £30 for old material; Mr. J. W. Mitchell, Carlow, £2,000; Mr. P. Darcy, Knocknacree, £1,884 4s.; Messrs. Connolly and Sons, Dublin, £2,150, with £33 for separate estimate, and an allowance of £70 for old material. It was decided to accept the lowest tender, Mr. Darcy's, on condition that he submits to next meeting two good solvent sureties to join him in a joint and several bond for £1,000. In the event of Mr. Darcy failing to do this, the committee decided to accept Mr. Mitchell's tender on the same conditions.

Chapelized. New National Schools at Chapelized Co. Dublin, illustrated in our last issue, have accommodation for 300 children. There are, for girls, two schoolrooms, each 58ft. long and 22ft. wide, on the ground floor, the boys being on the upper floor. There are also provided spacious class-rooms, teachers' rooms, cloakrooms, etc. The building has a frontage of nearly 100ft. towards the main road. The roof is surmounted by a handsome fleche, within which is placed a large Boyle's ventilator. The materials used throughout (with the exception of some few specialities) are of Irish manufacture—the bricks are Dolphin's Barn and Portmarnock; the window and door dressings, bays, etc., are of chiselled granite and red sandstone; and the panels, finials, etc., are of native terra-cotta. Messrs. W. Connolly and Son were the contractors, and Mr. Geo. L. O'Connor, the architect, both of Dublin.

Clonegal.—Mr. Herbert Robertson, of Huntingdon Castle Clonegal, M.P. for South Hackney, London, has entered into a contract with Messrs. Maguire and Gatchell, Ltd., Dawson-street, Dublin, by which they have undertaken to renew the hot-water heating apparatus, put in a new boiler, etc., in the parish church of Clonegal.

Cork.—On the 14th inst tenders were received for cottages on the Curragh-road, Cork, for Mr. Michael Goggin, in accordance with plans and specification prepared by Mr. James F. McMullen, architect, 30 South Mall.

THE CORPORATION.—Messrs. R. and H. Hall, Ltd., wrote stating, with regard to their proposal for the erection of buildings on the Marina, that the Committee were mistaken in thinking that the expenditure would be only £1,000 within three years. They were prepared to guarantee to spend £2,000 or £3,000, but they could not get the plans drawn up before they got the lease of the land. It was decided that the letting be made, provided a sum of £3,000 be spent on the buildings.

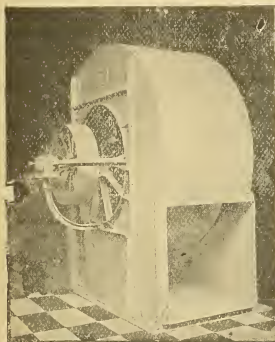
On Monday last estimates were received for the erection of an addition to Christian Brothers' College, St. Patrick's-place, Cork. The plans are by Mr. Samuel F. Hynes, F.R.I.B.A., 21 South Mall.

Tenders are invited for alterations to warehouse, Great George's-street, for Messrs. William O'Connor and Son, clothiers, etc., in accordance with plans by Mr. James F. McMullen, architect, 30 South Mall. Tenders are to be lodged on or before the 20th inst.

Dublin.—Artisan's dwellings are being built under the supervision of the City Architect, Mr. C. J. McCarthy. The first section of dwellings, comprising nine separate blocks, and containing in all seventy-two tenements, is rapidly approaching completion, the block being of very considerable construction. The walls, roof, and floors are already finished, and the plastering and plumbing work, etc., are well in hand, so that only a short time can elapse before the several tenements are ready for occupation. The contract for this section of the work is about £17,000. The second section of the building operations is also well advanced, the walls being 15ft. over the ground. This section comprises eleven blocks, containing sixty-six separate tenements or flats, several of these being intended for the use of the better class of artisans. Some will be three-roomed, and will, it is expected, readily let at 5s. to 6s. per week, while others will be two-roomed, with a probable rent of 3s. 6d. to 4s. 6d. per week; but all—whether two-roomed or three-roomed—will be what is called self-contained—that is, provided with

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COUNTY COUNCIL'S NEW OFFICES.—The building known for several years as the National Club in Rutland Square having been acquired by the Dublin County Council, was some time since handed over to contractors, who have completed their several contracts in a most satisfactory manner, rendering the premises, both externally and internally, one of the finest residences for its purposes in Ireland. The building has been remodelled by Messrs. J. and W. Good, builders, Dublin, according to plans prepared by Mr. W. Collen, C.E., County Surveyor. The painting has been done by Messrs. W. Martin, Son, and Co., of Stephen's Green, and the panelling of the walls and the parquet flooring by Messrs. Goodall and Co., of Manchester, while the entire furnishing details were entrusted to Messrs. Millar and Beatty, Limited, Grafton Street. The Council Chamber, committee room, and secretary's office are furnished in Austrian oak. The chairs are richly carved with Irish emblems, and, to match the panels, waxed only in natural colours. The mantelpieces are in "Adam's" style, with large "opes," and are each fitted with wrought iron club curbs in front of a very handsome and substantial pattern. The tables in the Council room, etc., are inlaid with dark green morocco, and the chairs are upholstered in the same material. The central figure in the carving of the chairman's and vice-chairman's chairs is a carved reproduction of the famous Kilmainham brooch—rather appropriate, as the headquarters of Dublin county government was Kilmainham until it was removed to Rutland Square, and the remaining carving on chairs and benches has been copied from the Cross of Kells. The tables are very massive and substantial, and all of them have been got up for utility and durability. The entrance hall is fitted up in mahogany, and there is an admirable stone staircase with mosaic floors and Irish stained glass windows. All the other offices are fitted in mahogany and polished pine, and special fittings have been made for storing away large quantities of reference papers, while for valuable documents and books a strong fire-proof room is being constructed in the basement. The rear buildings, which are spacious and extensive, will be occupied by pay offices and stores for necessaries in the outside business of the Council. Gas fittings and telephones are all that could be desired, and nothing has been left undone to render the new residence for the County Council of Dublin a credit to that body, to the city, and to the electors whom they represent. The cabinet-making and upholstery work has all been done in Messrs. Millar and Beatty's factory, with the exception of a few articles for which there is no suitable machinery in this country for turning it out in the time required, such as spiral turnings and roll-top desks. Great praise is due to Mr. Collen, C.E., County Surveyor, under whose care and personal directions the remodelling of the Rutland Square mansion has been successfully carried out, and whose admirable taste is seen in all the arrangements of the building.

The Oblate Fathers have just blessed two new side altars in their magnificent Church at Inchicore. One of the altars blessed was the Altar of the Sacred Heart, and the other was the Altar of St. Joseph and the Holy Souls. Both of the altars are thoroughly in harmony not only with the beautiful High Altar, but also with the noble proportions and interior of the church. The chancel, now complete in its embellishments, presents an appearance of elegance. The entire cost of the work, amounting to close on £10,000, excepting a few small unfurnished claims, has been paid. The general effect, both of the High and side Altars is one of grace. Dignity of conception has combined to produce an ensemble, in which the richness and, in places, luxuriance of the carving is tempered by the graceful and easy lines of the design. Both High and side Altars come from the studios of Messrs. Pearce and Sons, of 27 Great Brunswick Street. As regards

the figure work, an impressive effect is produced by the two angels, sculptured in marble, which stand at each end of the High Altar. Mr. George Smyth, the sculptor, is entitled to the warmest congratulations on the result of his art. Messrs. Smyth and Sons, Wicklow Street, have fitted the tabernacles on the side altars with wrought doors of solid silver. The doors are set with real amethysts, and the sacred devices "I.H.S." on one and "J.S." on the other. Messrs. Smyth also supplied the silver candlesticks on the altars, and a silver hanging lamp. It is a matter for great satisfaction to find that all the diversified art combined in this series of religious work was executed at home, and an examination of the workman-ship will afford the weightiest testimony to the superiority of the Irish-made articles to many forms of church ornamentation imported from abroad.

Dungarvan.—Sealed tenders were received at the meeting of the County Council, on the 9th inst., for the erection of county offices at Dungarvan. The county surveyor, Mr. L'Estrange Duffin, Waterford, prepared the plans.

Kilkenny. ST. CANICE'S CATHEDRAL.—A most interesting work has just been completed in St. Canice's Cathedral, Kilkenny, in the form of a window in memory of the late Sir John Power, Bart., who died in South Africa. The window consists of two lancets, the one representing Nehemiah exhorting the people and nobles to defend Jerusalem, and the other the Good Centurion beseeching Our Lord to heal his servant. Both subjects are exquisitely drawn and coloured, and produce a wonderfully rich effect. The bases contain on the one side the Family Armorial, and on the other the Regimental Arms, and a scroll with the inscription, "In loving memory of Sir John Power, Bart., who died at Lindley, South Africa, June 1st, 1900." The window was designed and executed by Messrs. Mayer, of Munich and London.

Lurgan.—Tenders were received for the erection of a new bank for the Belfast Banking Co., Ltd. Bills of quantities were prepared by Mr. S. C. Hunter, Scottish Provident Buildings, Belfast. Plans and specification by Mr. Vincent Craig, F.R.I.B.A., architect, 5 Lombard-street, Belfast.

New Ross.—NEW COURTHOUSE AND DISPENSARY.—The Chairman reminded the Council that they had before them a year or two ago the building of a dispensary and courthouse at Arthurstown. Unfortunately, the committee had taken no steps to give effect to its decision.

Rathdown.—The Rural District Council on Monday week last accepted the tender of Mr. J. J. Doyle, of Shankill, for about 950 yards of iron fencing, and about 12 each of gates and wickets.

On Monday, the 16th inst., the Council had before it, and adopted, the new improvement scheme under the Labourers' Acts. The total cost will be about £10,000. The scheme comprises between 50 and 60 cottages. Mr. R. M. Butler, of Dublin, is the architect.

Screen.—A new Church at Screen, Co. Wexford, is in the Romanesque style. The main entrance is through a deeply recessed and moulded doorway, surmounted by a pediment and cross. The roof is of pitch-pine. The church has been built throughout of local stone, with granite cut stone dressings from Newtownbarry. Mr. Kelly-Freeman was the architect.

Tubbercurry (Co. Sligo).—Mr. Fenton submitted a draft agreement, which he made out as between Mrs. Howley and the Council in regard to the Courthouse. The agreement set forth that the present Courthouse was to be altered in accordance with the plans and specification prepared by the county surveyor.

Helens Bay.—The Scheme recommended by Mr. J. H. H. Swiney, M. Inst. C.E., of Belfast, for supplying Helen's Bay with water, and which was referred to some months ago in this column, has been approved of, and Mr. Swiney has received instructions to proceed with the necessary plans and specification to enable the works to be carried out forthwith.

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Armagh.—At a special meeting of the Proposal Committee of this Council, held in the Courthouse, Armagh, the Committee approved of a sum of £55 for concreting at the Courthouse, Lurgan. An application for a sum of £250 was received as an extra presentment for Armagh County Infirmary. Considerable discussion ensued, and finally it was decided that Messrs. Armstrong and Simpson should visit the infirmary and inspect, and present their report on the proposed alterations. Applications were received from the County Asylum Board for £550 for alterations to corridors, etc., and the providing of a more efficient water supply, for which latter £170 was asked. The sum was passed, but the other application was referred back to the Asylum Committee for information as to the manner in which the money was to be borrowed.

Baillieborough.—The District Council of above District will, on 23rd inst., consider tenders for supplying at Mullagh, a village wheel pump, with 4-inch chamber, etc. Mr. Hugh Clarke is Clerk of District Council.

MAGILLIGAN RAILWAY SCHEME.—It is stated that the Belfast and Northern Counties Railway Company will commence the reconstruction of a railway line from Bellarena to Magilligan Point about the 1st of February next, and that a large sum of money will be recommended for providing a pier at both places.

Howth.—THE NEW DRAINAGE.—The North Dublin R.D.C. has passed the following resolution:—"That when the plans, etc., submitted to the Council for drainage and water supply of Howth and Sutton are received they be referred to an eminent engineering expert associated with the Chief Engineer of the Local Government Board if he will act; also that all plans, etc., sent in to be under a *nom-de-plume*, with the real names and address of the authors of the various plans, under seal, to be opened after the assessors have made their award."

Mitchelstown.—A deputation to provide the means for lighting Mitchelstown with electric light, waited on the R. D. Council to obtain their sanction for raising a loan of £2,000 for the purpose. In the last few years Mitchelstown has been provided with a light railway and an excellent water supply. Very Rev. Canon Rice, P.P., stated the case, asking the Council to give the authority for raising the loan of £2,000. The R. D. Council passed a resolution approving of the application for the loan of £2,000, so that further prompt action will probably be taken, and Mitchelstown will, doubtless, be lighted in the winter of the year of grace 1902 with electric light.

Newtownards.—A special meeting of the Newtownards Urban Council was held. The existing sewers had been marked on the map as well as could be done. It was on a small scale, but it was the largest ordnance map of the town that could be procured. Mr. Lamont, C.E.—It is the ordnance map, the largest I could get, but I think it is plain enough. Mr. McCutcheon—What is the extent of the proposed works? Mr. Lamont—About four-and-a-half miles. The other streets have partly built sewers and partly tiled, only about a mile of the latter. Mr. McCutcheon—Will they lend money on that estimate, seeing there is no discharge except into the canal? Mr. Lamont said the canal was naturally the outlet for all the sewage of the town, and from it to the sea. A good many of the present sewers discharged into open drains, and from them to the canal, and these drains ran through the centre of the town, and were

the source of nuisance. The Chairman thought there was no use at present raising that question, as if the Local Government Board did not sanction the loan they were just where they started. Mr. McCutcheon—To discharge into open sewers is only creating a nuisance. Mr. Waters—They must be discharged somewhere. Mr. McCutcheon—What is your estimate of cost? He thought it should be mentioned to the Local Government Board that the canal was virtually the main sewer of the town, and the sea water came up it twice a day. Another engineer, Mr. Fleming, assisted him in the calculations. Mr. McCutcheon—Do you consider the canal the proper outlet for the sewage? For a mile of its course there is a fall of only 1½ ft. Mr. Lamont—Oh, I do not say so. The tides are of service, but sometimes the sewage is carried back, and at times the banks overflow.

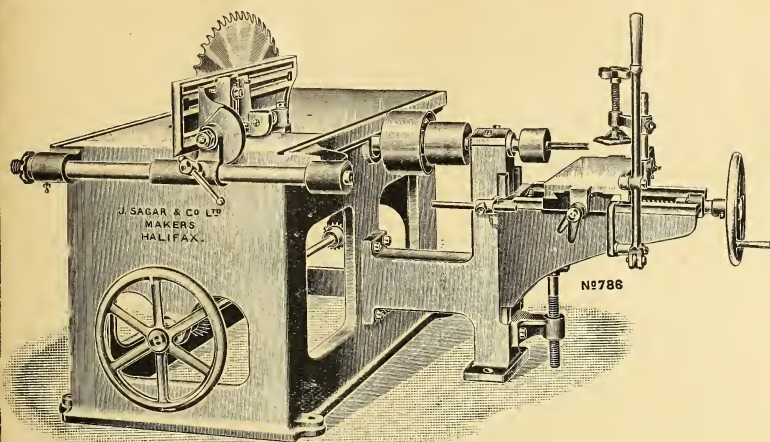
Queenstown.—Arising out of the bursting of the water main between Tibbotstown and Queenstown, Mr. Grogan pointed out that it was most necessary that they should have a large storage reservoir at Carrignafof. If they had that reservoir they would be able to dispense with the pumping station at Ballywilliam. The Chairman said they had not sufficient money to complete the Tibbotstown scheme, and they should not embark on the erection of a storage reservoir, which would probably cost £3,000. Mr. Grogan—About £1,000. The Chairman—It is a matter that will have to be dealt with in the near future, because if you want to economise and do away with the pumping station at Ballywilliam it will be absolutely necessary to erect a storage reservoir at Carrignafof. Mr. Grogan then proposed that the engineer be requested to furnish an estimate for a three and six days' storage at Carrignafof. The Clerk stated that Mr. Grogan was perfectly right in referring to the want of a reservoir at Carrignafof, and said that some time ago the Council's engineers submitted an estimate in which it was stated that the cost of such a reservoir would be between two and three thousand pounds, but that one would be 15 feet higher than the present one. That would give them six or seven days' supply, and until such time as they had a storage of water it would be necessary to continue the pumping station, because there would be a difficulty with the Admiralty if the Council could not supply Haulbowline with water, as they would be bound to do by the terms of the proposed agreement. The motion was then passed.

Rosslare.—Great interest was taken in the contract for the extension of the Rosslare Harbour Pier, which was decided some days ago. A large number of tenders were received, and the lowest was that of Messrs. Brand and Company, of Buchanan Street, Glasgow. Amongst the other firms that tendered were Messrs. McAlpine and Company, railway contractors; Messrs. Pearson and Company, railway contractors; Messrs. Jackson, and other. The figures ranged between £200,000 and £250,000. The tender of Messrs. Brand and Company was accepted. The contract is the largest that has been given away in the South of Ireland for the last twenty years. The pier is to be extended 1,000 feet, and the work is to be done within three years. The expending of such a large sum of money is certain to serve many classes of the community.

Skibbereen.—Mr. P. C. Cowan, chief engineering inspector Local Government Board, opened an inquiry at Skibbereen into an application by the Urban Council for a supplemental loan of £500 for the purpose of a general improvement in the water supply to the town, which is much needed for some time. The application for loan was rejected.

Waterford.—The Local Government Board wrote approving of the decision of the District Council to appoint a Clerk of Works to superintend the carrying out of the Dunmore East Sewerage scheme, in respect of which a loan of £450 was sanctioned.

Youghal.—The following tenders were received for the extension of the Strand sewerage scheme—Mr. William Callaghan, £267 ss. 2d.; Mr. E. Thomas, £250 10s. 7d., and Messrs. Murray and Sons, £235. The tender of Messrs. Murray and Son was accepted.



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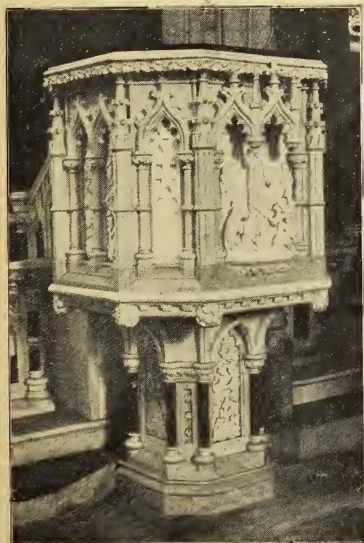
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TRADE JOTTINGS.

The Withnell Brick and Terra Cotta Company, Ltd., Abbey village, near Chorley, Lancashire—tell us that their fine red bricks, to which we referred in our last issue, are four tons weight per 1,000, and that the average rate is £1 9s. per 1,000, delivered on Dublin quays.

The New Cottage Hospital, Cranleigh, is being warmed and ventilated by means of Shorlands' patent Manchester stoves and grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

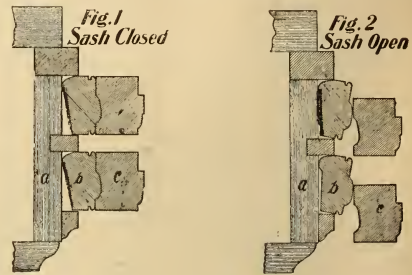
Messrs. Farrer, Barber, and Co., of Birmingham, send us a very good catalogue of their latest sanitary specialities. All of this firm's fittings are particularly well made, substantial articles, of thoroughly up-to-date character. They have several useful lines of particularly good, cheap baths, as well as of the higher-priced varieties. One of Messrs. Farrer, Barber's leading specialities is the "Automatic" closet, an automatic trapped closet for fixing in ranges in schools, etc. This pattern possesses all the efficiency of a trough closet, with an entire absence of the dangers inevitably arising from the use of untrapped trough closets so common in institutions.

Duresco.—Messrs. James Duthie and Son are now completing a good year with "Dure-co" in Ireland, and 1902 promises well. Amongst other contracts in progress or prospect is the Cork Exhibition, which has just been commenced by Messrs. Bible Brothers, Ltd., their Cork agents. The agents in Waterford, Limerick, Londonderry, and Belfast are also doing well. The importance of securing a good footing in the Irish capital caused Messrs. Duthie to open a branch office for a few years, in order to popularise "Duresco." This object having been attained, they have arranged to close these premises at 42 Great Brunswick-street on the 10th inst., and leave their interest in the hands of their former agents, Messrs. Brooks, Thomas, and Co., Ltd., 4 Sackville-place, who take over the stock at that date. Mr. J. Drummond Duthie will visit Ireland three times a year, and all orders received in Glasgow will be despatched from there or London without delay.

Electric Pure Air Radiators.—For the past three months Mr. J. Mellings, of Dashwood House, New Broad-street, London, E.C., has advertised in our columns "Pure Air Radiators," the claims put forward for which were no reduction of oxygen by coal fire, and no deleterious fumes from gas stove. The particular system employed, however, was inadvertently omitted to be stated, and, to prevent misconception, let us now add that it is electric. These radiators are highly spoken of by medical men, as they give forth abundant heat without affecting the purity of the atmosphere in the apartment. In fact, so highly are they regarded by the medical faculty that they form part of the Nordrach consumption cure. Any reader interested should write Mr. Mellings for his pamphlet.

A New Sash Fastener.—Messrs. Colledge and Bridgen, of Wolverhampton, the well-known lock-makers, send us particulars of a sash-fastener, or, rather, "Storm-fastener," as they prefer to call it. It is known as "Padmore's 'Storm fastener,'" and is patented. Of all the fittings of a dwellinghouse, none can, in proportion to their size, give so much annoyance and trouble as a bad sash-fastener. We in Ireland know this too well, for the driving rains and strong winds of the West and South-west Coast will penetrate almost any window, and no matter how well it may be made, will cause the sash to rattle. Todman's patent avoids this, for it is made on the old-fashioned screw-down principle adapted to a modern fitting. There is a counter-sunk hole, an important feature in the bolt or "Storm-fastener"; consequently no wedges are required. One turn of the screw fastens the bolt securely, lifts up the back sash, and draws the windows tightly together, however badly fitted, and so preventing draughts or rattling. We can cordially commend this pattern to the notice of our readers. The price is very moderate, being only 14s. 6d. per dozen, in all brass, which we recommend, or 10s. per dozen, in malleable iron, with brass screw.

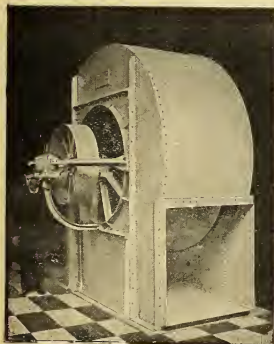
A New Sash.—This sash, which is known as "Tabor's Improved Sash," is a new sash, sliding, revolving, and removable. The illustrations which we publish serve to convey an idea of the working of this patent. Figure 1 is a



(a) Side of frame, (b) Hanging strip, (c) Sash stile.

section through side of window, showing form and position of hanging strip when sash is closed. Figure 2 is the same, showing sash pivoted slightly, with strip swung back and joint unlocked. The sash is made two inches narrower than frame, thus allowing one inch on each side for the hanging strip. The rib upon the back of the strip presses closely against the jamb, making a thoroughly weather-proof joint, as well as forming a fulcrum from which is imparted the hinge or swinging motion to the strip when the sash is turned on its pivots. The joint between the sash and strip is of a form to close tightly, excluding dirt and wind. This form of hanging strip is the strong feature of this sash, for, while other safety windows employ a strip, none of them fill the space between the sash and the frame completely, and at the same time giving a clearance for unlocking joint. The method of attaching sash to strip is simple. A hollow pivot is cast on the face plate which screws to edge of sash; through this pivot is a tension pin with a head on the outer end. The other end passes through, and is attached to a flat spring which is concealed in the sash stile. On the back or inside of this slot is an incline with which the head of the tension pin engages when the sash is placed in position, thus straining the spring sufficiently to close the joint between the sash and the strip tightly. When the sash is to be pivoted it is only necessary to raise it slightly and push outward firmly on the bottom rail. The upper sash operates the same as the lower. Should the sash at any time, while pivoted, become automatically locked, it can be instantly freed by pushing down and closing. In other words, when the sash is pivoted, and lowered nearly to bottom of frame, the catches will lock, but never otherwise. This fixture (No. 2) is especially designed for windows having gratings or screens fastened to the outside. It is readily seen by the removal of upper and lower sash that the window increases the circulation very largely. No. 1 fixture is identical in all details except the slotted face plate on hanging strip, for which is substituted a plate with a hole to receive the pivot, and having on its back side a projection to engage with the head of tension pin. The makers claim, with justice, we think, that their window is safe, simple, durable, and economical. The following points are worth remembering in connection with this patent:—That for warehouses the top half of sash is fixed; the bottom half can be made to stop at any point for ventilation; there are no cords to break; the principal ratchet is kept up to its work by semi-circular flat steel spring. Another great advantage in this uncertain climate is that there are no draughts, the sash fits so closely. The patent is equally adapted to small windows or large. One of the best testimonials in its favour is that there are 18,000 in use in eighteen months. Another advantage possessed by the patent is that old windows can be easily refitted. The sole agents for the patent are Mason's Foreign Patents, Limited, 15 Barbican, London, E.C.

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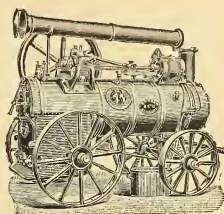
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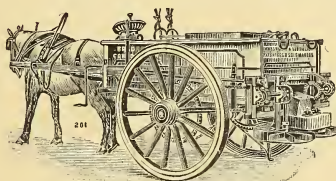
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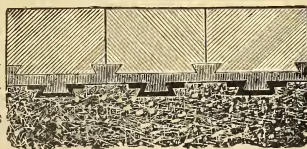
Gold Medal, Melbourne, 1888. 1st Class Diploma, Adelaide, 1887.
Gold Medal, Society of Architects, 1886 and 1887. Gold Medal, Liverpool, 1885.
Silver Medal, Highest Award, Inventions Exhibition, 1884, 1885.
Gold Medal, Health Exhibition, London, 1884. 1st diploma, Delft, 1885.

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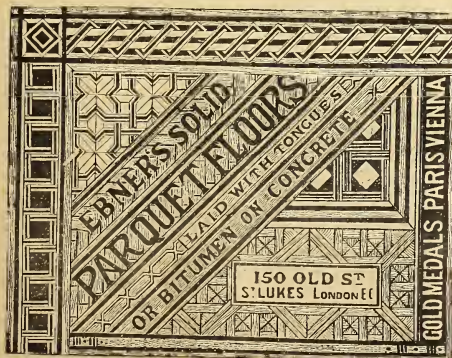
The following Awards also made for Hydrofuge Flooring :-
Gold Medal, Amsterdam, 1883. Diploma, Ghent, 1883.
Diploma of Honour, Antwerp, 1885. Gold Medal, Paris, 1889.

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Work.	For Whom.	Particulars from	Last date.
Renovation of Presbyterian Church, Letterkenny. Erection of a Manse, Carrickfergus.	—	Mr. John McIntyre, Architect, Main Street, Derry. Mr. S. P. Close, Architect, Carrickfergus.	April 22 April 24

TENDERS.

RICHILL DISPENSARY.—The following were the Tenders for the building of Richill Dispensary:—Alex. Whelan, Newery, £1,150; D. P. Martin, Armagh, £1,065; J. Cullen, Tandragee, £990; accepted.

The following Tenders were accepted for the erection of cottages on the last plan:—Mr. Laurence Cantwell, for four cottages in the townland of Poirrone, at £125 each; three cottages in the townland of Dournane, at £126 each and one in Aghish, at £128; Mr. Michael Fitzpatrick, Moonveen, Portanacully, one cottage at £132; Mr. Patrick Higgins, a cottage in the townland at Granshagh, at £125.

ENNIS DISTRICT LUNATIC ASYLUM.
COMPETITION PLANS.

Plans will be received in competition by the Committee of Management on or before the 10th June, 1901, from competent Irish Architects practising in Ireland, for additions and alterations to the Ennis District Lunatic Asylum, Co. Clare. Plans of the existing buildings can be seen on application to the Resident Medical Superintendent.

The plans to be sent in under motto, and a sealed letter should accompany each set of plans, bearing the name and address of the author of the design. Plans to be drawn to a scale of sixteen feet to one inch.

An estimate of the cost of the proposed new buildings, setting out the cube of the buildings, with the price at which it is calculated, will be required.

The Committee may appoint an Assessor to adjudicate on the Plans submitted in competition. A premium of £50 will be paid to the author of the design placed first, but they do not bind themselves to adopt the design placed first by the Assessor, or any design, and it does not necessarily follow that the author of the design placed first will be employed to carry out the work.

By Order,

J. H. ENRIGHT, Clerk of Asylum.

26th February, 1901.

DUBLIN UNITED TRAMWAYS COMPANY.
TO BUILDERS AND OTHERS.

Furnace Cinders and Ashes suitable for Concrete, Road-making, &c., for Sale at RINGSEND POWER STATION, price 3d. per Load. Order for same to be had at the Secretary's Office, 9 Upper Sackville-street.

R. S. TRESILIAN,
Secretary.

ARCHITECTURE.—Draughtsman is willing to Prepare Scale and Detail Drawings for Alterations, &c. Accuracy guaranteed; Specifications and Quantities. Terms moderate.—Reply to this Office.

NORTH DUBLIN RURAL DISTRICT.

TO DRAINAGE CONTRACTORS.

The North Dublin Rural District Council invite Tenders for the Drainage Works and the Construction of Inspection Chambers in that part of Blackhorse-lane, at the Ashtown end, in accordance with Plan and Specification, which can be seen and copied in my Office here on lodgment of £1, which will be returned to all persons sending in *bona-fide* Tenders. Any further information can be had from Mr. Morris, Clerk of Works.

Tenders, giving the names of Two Solvent Sureties willing to join in a Bond for the due performance of the Contract, will be received by me up to 10 o'clock a.m. on WEDNESDAY, the 24th April, 1901, upon which day the Rural District Council will consider same.

The lowest, or any, Tender not necessarily accepted.

By Order,

JOHN O'NEILL, Clerk of the Council.
Offices, North Brunswick-street, Dublin,
10th April, 1901.

TO BUILDERS.

Tenders are required from Competent Persons for the Erection of a New Warehouse and Shops at junction of Great Victoria-street and Howard-street, for Messrs. John Fulton and Co., Limited.

Schedule of Quantities and Conditions of Tender can be obtained from Messrs. W. H. Stephens and Sons.

Plans and Specification may be seen at our Office.

Sealed and endorsed Tenders to be lodged with us on or before the 26th inst.

The lowest, or any, of the Tenders will not necessarily be accepted.

YOUNG & MACKENZIE.
Scottish Provident Buildings, Belfast,
April, 1901.

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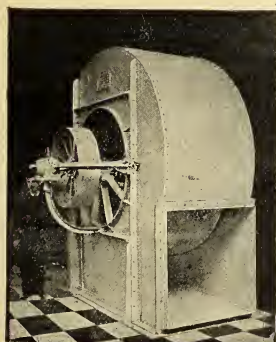
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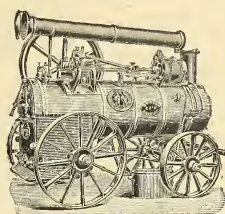
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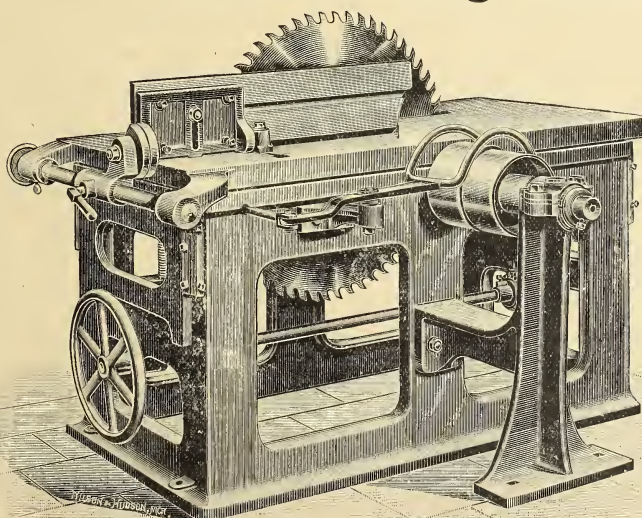
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ARDEN WORKS, HALIFAX, ENGLAND.

TENDERS.

DUBLIN.—Tenders for new Church, Clonliffe (I.C.). Designs by R. Caulfield Orpen, Esq., B.A., 7 Leinster-street, Dublin. Quantities by William Butler, Esq., C.E.—Mr. R. Farquharson, £2,400; Mr. R. Mellon, £2,557; Mr. B. Whyte, £2,945; Mr. L. Moore, £3,127.

Royal Victoria Eye and Ear Hospital, Ade aide Road.—General Building Works—Messrs. S. Bolton & Son, £49,449; Mr. James Beckett, £47,000; Messrs. McLaughlin & Harvey, £45,243 19s. 4d.; Messrs. H. & J. Martin, £42,730 0s. 11d.; Messrs. J. & P. Good, £39,600 (accepted). Plumbing, Heating, Cooking Appliances, Laundry Fittings, Fire Hydrants, Steam Boilers and Mains, etc. Messrs. Naguire & Gatchell, £3,638 8s. 7d.; Mr. Thomas Little, £2,902 1s. 5d.; Mr. William Baird (accepted), £7,830 2s. 6d. Electric Lighting, Telephones, and Bells—Messrs. Edmundson & Co., £2,713 13s. 3d.; Messrs. Fletcher & Phillipson, £2,508 10s. 4d.; Messrs. Egan & Tallow, £2,335 16s. 3d.; the Ampere Electrical Co. (accepted), £2,124 10s. Mechanical Ventilation of the Out Patients' Department—Messrs. Mathews & Yates (accepted), £287 10s. Messrs. Rawson Carroll and Batchelor, Architects, 83 Merrion Square, S.

For Electrical Plant for the Dublin Electricity Supply.—Tenders recommended for acceptance (Section F) Alley and McJellan, Palmadie, Glasgow, condensers; (F) Babcock and Wilcox, Limited, Oriel House, Farringdon-street, London, E.C., pipework; (G) D. Stewart and Co., Limited, London road Ironworks, Glasgow, feed pumps; (H) J. Musgrave and Sons, Limited, Globe Ironworks, Bolton, and Babcock and Wilcox, Limited, superheaters; (I) Graham, Morton and Co., Limited, Black Bull street, Leeds, cooling plant; (K) Carrick and Ritchie, Waverly Engineering Works, Edinburgh, crane; (L) Easterbrook, Alford & Co., Limited, Albert Works, Sheffield, workshop equipment; (N) General Electric Co., Limited 69 Queen Victoria street, London, E.C., sub-station switch gear; (O) British Westinghouse Electrical Manufacturing Co., Limited, Norfolk-street Strand, London, W.C., transformers; (P) Verity's, Limited, King street, Covent Garden, London, W.C., arc lamps; (Q) Verity's, Limited, arc pillars; (R) Witing Bros., Limited, 49 Cannon street, London, E.C., motors and motor-generators; (S) Electrical Power Storage Syndicate, Ltd., 4 Great Winchester street, London, accumulators; (T) British Westinghouse Electrical and Manufacturing Co., Ltd., meters; (U) W. Coates & Sons Ltd., 5 Leinster-street, Dublin, works wiring; and W. Stewart, Adelaide-street, Belfast, sub-stations.

For building and completely finishing 10 labourers' dwellings within the time specified by contract deed, as follows—viz., six cottages at Howth and four cottages at Raheny North—for the North Dublin Rural District Council.—W. Lacey, Howth, six labourers' cottages at Howth, £600; four ditto at Raheny, £600 (accepted).

LONDONDERRY.—Marble High Altar, Waterside, Derry.—Mr. Edmund Sharp, Great Brunswick street, Dublin, £1,255. G. C. Ashlin, Esq., Architect.—For rebuilding and fitting up stables at William-street, Londonderry.—Daniel Gillespie, William-street (accepted), £280; W. J. Maultsail, Rosemount, £300; J. Rooney, Lecky-road, £396 11s. 2d. Mr. James P. McGrath, Architect, Derry.

BIRR.—Marble and stone High Altar at Clarend, Birr.—Mr. Edmund Sharp, Dublin, £232. W. H. Byrne, Esq., Architect.

BELFAST.—Erection on Donegal quay, Belfast, of a weighbridge capable of weighing up to 20 tons. H. Pooley & Son, Ltd., 27 Victoria-street (accepted).

MITCHELSTOWN (CO. CORK).—Construction of main and branch sewers in connection with Kingston College, Mitchelstown. W. H. Hill & Son, Engineers, 28 South Mall, Cork.—J. Roche, £235; D. Creedon, £230; W. Fullwood, £228 17s. 8d.; C. McCarthy, £187 10s.; J. Brown, Fermoy (accepted), £175.

OMAGH.—Repairs and alterations to the workhouse.—Charles McCrory (accepted), £102. Mr. J. L. Donnelly, Omagh, Architect.

ARDFE.—Labourers' Cottages Contracts.—Mr. John Halpin, Ardfce, was appointed contractor for the erection of a cottage at Bigstown at £139. Mr. Daniel Clark, Ardfce, one at Mandstown at £138 and one at Machin Hill at £142. Mr. Owen Rush, Mulahusa, Carrickmoss, was appointed contractor for a cottage at Balrath at £138; and Mr. Terence Rush, of Ballyhoe, was appointed contractor for a cottage at Newstone at £116. Mr. Luke Madden, Grangegeeth, was appointed contractor for a cottage at Cadraeth, and another at Grangegeeth at £137 each.

CORPORATION OF DUBLIN.

MARKETS COMMITTEE.

The Markets Committee of the Dublin Corporation are prepared to receive Tenders for the supplying and erection at the Dublin Corporation Abattoir, North Circular road, of Steel Girders.

Plans and Specifications may be inspected at the Office of Mr. Spencer Hart, City Engineer, City Hall, Dublin, any day except Saturday, between the hours of 11 a.m. and 4 p.m., and Copies, as well as Form of Tender, may be obtained by *bona-fide* Tenderers on payment of the sum of £2 2s. 0d., which amount will be refunded on return of the Plan and Specification accompanied by a *bona-fide* Tender.

Tenders, Sealed and Marked "Tender for Work at Abattoir, must be addressed to the Chairman of the Markets Committee, and delivered at the Secretary's Office, City Hall, Dublin, not later than 12 o'clock noon, on SATURDAY, JULY 13th, 1901.

Each Tender must contain the name and address of two sureties, who will be prepared to execute a joint and several Bond for the due performance of the Contract in a sum of two-thirds of the Contract price.

The Committee do not bind themselves to accept the lowest or any Tender.

The Contractor shall be bound, as far as possible, to supply materials of the best Irish manufacture.

The Contractor shall pay to those employed on the work under his Contract not less than the minimum standard rate of wages paid in Dublin and district, and shall employ regular tradesmen to perform tradesmen's work, and observe the hours and conditions of employment now recognised as proper there.

(By Order),

CHARLES POWER, Secretary.

City Hall, Dublin, 26th June, 1901.

NAVAN UNION.

THE BOARD of GUARDIANS will receive Tenders up to 12 o'clock noon, on WEDNESDAY, 10th JULY, 1901, for carrying out certain improvements to the Laundry, Drainage, Water Supply, and Infirmary of the Workhouse, according to plan and specification of Mr. A. Scott, Architect, which can be seen at this office.

Sealed Tenders, containing the names of two solvent sureties for such sum as may be fixed by the Guardians, for the due performance of the contract, may be dropped into the tender-box at the Boardroom, up to the hour of 12 o'clock noon on the above-named day. The Guardians do not bind

themselves to accept the lowest or any tender. For further particulars apply at this office.

Printed forms of Tender can be had on application at this office, and none other will receive attention.

(By Order),

CHARLES LACY,
Clerk of the Union.

Bora-croom, 12th June, 1901.

It is a happy repetition of the experience of Sir Christopher Wren that the late Sir Joseph Bazalgette, C.B., C.E., who died 1st March, 1891, leaving a widow, who was the fourth daughter of the late Edward Kough, Esq., J.P., County Wexford, should at length be commemorated on the site of his great professional achievement. Mr. George Simonds' sculpture will give a sentimental completeness to the Thames Embankment. The historical repetition of the legend "Si monumentum requiris circumspeice," which Robert Mylne, one of Wren's successors in the office of architect and surveyor of St. Paul's Cathedral, placed at the entrance into the choir to the honour of Sir Christopher, may be regarded as specially applicable to the monument furnished to the memory of Sir Joseph Bazalgette by the Victoria, Albert, and Chelsea Embankments. Sir Joseph was an English engineer of French descent, and was born at Enfield, Middlesex, in 1819, the son of Captain R. Bazalgette, R.N., and having been educated as a civil engineer, was appointed Chief Engineer to the Metropolitan Board of Works, 1856, and carried out—1858-1865—from his own designs, the system of the London main drainage, and subsequently, besides the Embankments already mentioned, built the new bridges at Putney, Hammersmith, and Battersea. He became C.B., in 1871, and was knighted in 1874. Mr. George Chatterton, son of the Vice-Chancellor, Engineer-in-Chief to the Dublin main drainage scheme, is married to a daughter of Sir Joseph Bazalgette.



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TENDERS.

BELFAST.—For the sewerage, paving, &c., of new streets to be completed during the next twelve months, for the Improvement Committee.
—J. Ross and Sons, Cliftonville, Belfast, per schedule (accepted). For erection of stores in the potato market, Chichester Street, for the Market Committee.—Roberts and Armstrong, Lower Windward, Belfast, £1,046 (accepted).

DUNGARVAN.—For carrying to completion the Ballinacourty water supply, for the Dungarvan Rural District Council.—G. Stokes and Sons, Grattan Square, £1,166 (accepted).

KILMACRENNAN.—For building additions, including plumbing and sanitary arrangements to dwellinghouse, Kilmacreennan, for Neil Coyle, Esq., J.P., Mr. John M'Intyre, Letterkenny, Architect.—W. J. Mooney, Bishop street, Londonderry (accepted), £129 10s.; D. M'Caffrey, Strabane, £131 3s. 6d.; W. Wilson, Letterkenny, £171.

CORK.—For stabling in Bishop Street, Cork, for Messrs. Beamish and Crawford, Limited, brewers, Cork. Messrs. Houston and Houston, 5 York Buildings, Adelphi W.C., architects. Quantities by Mr. A. E. McEwan, Waghorn, surveyor, 10 Craig's Court, S.W.; E. and P. O'Flynn, £7,830; J. and P. Good, Limited, £7,150; Delaney and Co., £6,594; J. Lisk, £6,200; S. Hill (accepted), £6,035.

NAVAN.—Sanitary annexes, sewerage, water supply, Laundry Equipments, Union Workhouse, for the Navan Board of Guardians. Anthony Scott and Son, Architects, Drogheda, £846. John Kennedy, 11 and 12 Merrion-row, Dublin, £898 17s. 6d.; Smith Brothers, Kells, £857 15s.; Roddy and Co., Dundalk, £250; F. Fogarty, Drogheda, £846. Architect's estimate, £813 9s.

BALLYNATRAY.—For building and other improvements to Ballynatray House, for Colonel Hilroyd Smith. Messrs. W. H. Hill and Son, architects, 28 South Mall, Cork. Murray and Son, Youghal, Co. Cork (accepted), £675.

LONDONDERRY.—For additions to dwellinghouse, Kilmacreennan. Mr. John M'Intyre, architect, Letterkenny. W. Wilson. £171; D. M'Caffrey, £151 3s. 6d.; W. J. Mooney, Bishop-street, Londonderry (accepted), £129 10s.

CHARLEVILLE.—Carrara Marble High Altar, Charleville, Co. Cork. M. A. Hennessy, Architect and C.E., Cork; £675.

DONAGHMOYNE.—Marble and Stone High Altar, Donaghmoynne. J. C. O'Connor, Architect, and M.R.I.A.I., £130.

DUNDALK.—Carrara Marble Side Altar and Statue, Killeurley, Dundalk. £135. Mr. Edmund Sharp, Sculptor, Great Brunswick-street has secured above contracts.

CORPORATION OF DUBLIN.

MARKETS COMMITTEE.

Discharge from Pipes.—When diameter of pipe and length are constant the discharge varies directly as the square root of the head, and conversely the head required is directly as the square of the discharge. When head and diameter are constant the discharge is inversely as the square root of the length.

The Special Characteristics of a few English Cathedrals.—Christ Church, Oxford, is said to be the smallest of English cathedrals; whilst Wells, though also small, is generally considered to be one of the most beautiful. Pugin once remarked of Salisbury:—"I have travelled all over Europe in search of architecture, but I have seen nothing like this!" And there are certainly "points in which Salisbury Cathedral stands without a rival in the world." The most northern cathedral is that at Newcastle, though Carlisle stands yet the nearest to Scotland. St. Albans is largely constructed of the ruins of ancient Verulam. Lincoln rejoices in the beauty of its situation, Peterborough in its famous west front, Carlisle in its east window, surpassingly beautiful. York possesses the largest nave and central tower of any English cathedral, whilst the celebrated inscription, "Ut rosa flos florum, sic est domus ista domorum," aptly describes its glorious chapter-house. The mention of the clustering spires of Lichfield Cathedral, "The Ladies of the Valley," and the exquisite stone covering stretching over an expanse that occupies more than half an acre of ground, and which constitutes the pride of Norwich, must bring this portion of our notice to an end.

The Markets Committee of the Dublin Corporation are prepared to receive Tenders for the erection at the Dublin Corporation Abattoir, North Circular road, of Chimney and Boiler House, as well as Boiler setting.

Plans and Specifications may be inspected at the Office of Mr. Spencer Harty, City Engineer, City Hall, Dublin, any day except Saturday, between the hours of 11 a.m. and 4 p.m., and Copies of Form of Tender and Bills of Quantities may be obtained by *bona-fide* Tenderers on payment of the sum of £2 2s., which amount will be refunded on the return of the Bills of Quantities accompanied by a *bona-fide* Tender.

Tenders, sealed and marked "Tender for Works at Abattoir," must be addressed to the Chairman of the Markets Committee, and delivered at the Secretary's Office, City Hall, Dublin, not later than 12 o'clock noon, on SATURDAY, JULY 27th, 1901.

Each Tender must contain the name and address of two sureties, who will be prepared to execute a joint and several Bond for the due performance of the Contract in a sum of two-thirds of the Contract price.

The Committee do not bind themselves to accept the lowest or any Tender.

The Contractor shall be bound, as far as possible, to supply materials of the best Irish manufacture.

The Contractor shall pay to those employed on the work under his Contract not less than the minimum standard rate of wages paid in Dublin and district, and shall employ regular tradesmen to perform tradesmen's work, and observe the hours and conditions of employment now recognised as proper there.

(By Order),

CHARLES FOWER, Secretary.

City Hall, Dublin, July 9th, 1901.

TO BUILDERS.

Tenders are invited for Building an addition to the "Eccles Hotel, Glengarriff." Plans may be seen and all particulars obtained on application to the Architect, ARTHUR HILL, B.E., F.R.I.B.A., 22 George's-street, Cork.

N.B.—The Lowest or any Tender will not necessarily be accepted.

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Boiler Seatings, Brick Kilns, or any heavy Brick Work executed in best manner. Estimates given.



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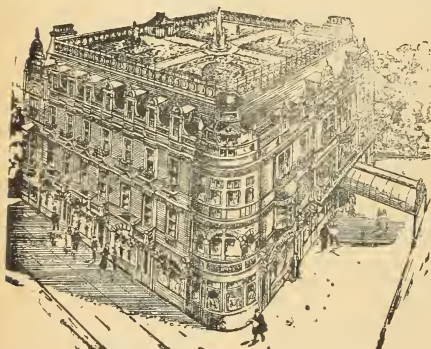
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The Temperature of the Rooms immediately beneath the Vulcanite Roof is more even in water and summer than under any other Roof. When properly laid, repairs are never required, and all Roofs are guaranteed. The Roof Surface can be used as a garden or for any other purpose. The cost of construction is even less than for a Slate or Tiled Roof. Lowest Rate of Insurance. More Fireproof than Slated Roofs.

SHEET ASPHALTE For Dampcourse, Waterproofing Vaults, Bridges, Tunnels, &c.

Is manufactured ready for use in lengths of 40ft. and any width up to 40in., being more convenient than the usual slabs. Price lower, and quality much superior than any similar article in the market. Full Particulars, Catalogues, Detail Sketches, Estimates and Samples.

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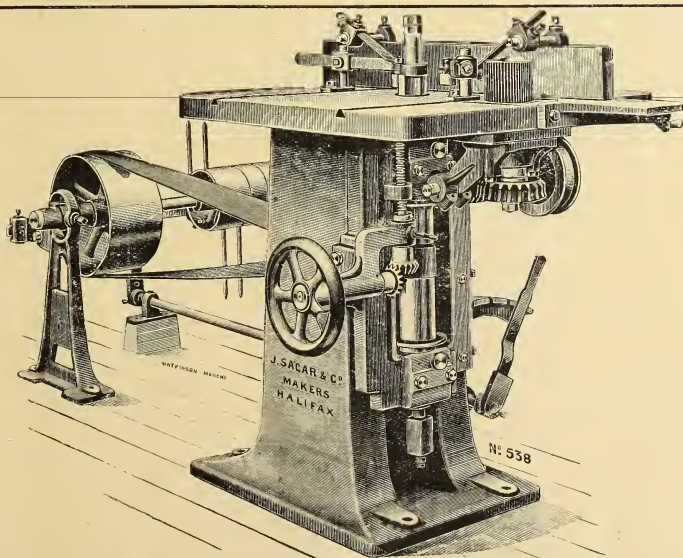
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This Machine is similar to the one we illustrated on this page in August 15th issue, but it also has an Automatic Roller-feed Motion for straight work, which greatly increases its usefulness to a Joiner or Cabinet Maker.

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Makers of all kinds of Woodworking Machines for Joiners, Builders, Cabinet Makers, &c.,

DUBLIN OFFICE:—35 Parliament Street.

BELFAST OFFICE:—F. A. PORTER, 13 Queen's Square.

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
Erection and completion of a Lecture Hall at Stewartstown, Co. Tyrone, adjoining Presbyterian Church	—	Mr. Henry Hobart, Architect, Dromore, Co. Down	26th August
Building and completion of a Nurse's Home at the Workhouse, Belfast	The Guardians	Messrs. Young and McKenzie, Engineers, Scottish Provident Buildings. Bills of quantities can be seen at Mr. Ferguson's office. Same address	27th August
For the erection of a teacher's residence at Glencrow, Moville	—	Mr. James A. Jamieson, Moville, or at the office of Mr. A. Robinson, C.E., Richmond-street, Londonderry	31st August
For the erecti- n and completion of a Lecture Hall in connection with Ballygilbert Presbyterian Church, near Helens Bay Str. (Co. Down)	—	Rev. William Dickson, Helens Bay, Co. Down	31st August

TENDERS.

CORK.—For erection of a pair of semi-detached villas in the Magazine Road, Cork. Messrs. W. H. Hill and Son, architects, Cork.—A. Gaul, £530; D. Hegarty, £530; M. Galvin, £525; A. O'Connell, £490; P. Spillane, £490; J. Delany and Co., £480; J. Kerns, 34 Fish-street, Cork (accepted), £429. For erectio of six houses near College-road, Cork. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.—S. Hill, Anglessea-place (accepted), £4,300.

CARRICKFERGUS.—For supplying any quantity up to 1,000 tons zinc, hand or best machine broken stones from approved quarry and 100 tons of screenings, or any quantity up to 1,000 tons of stones, suitable for breaking for road metal, for the Urban Council of Carrickfergus. Accepted tenders:—A. Rodgers, Thomas-street, Carrickfergus, stones, 2s. 6d. per ton; J. Kane, Ballycove breaking, 1s. 3d. per ton, less to per cent. (screenings not to be measured).

DUNGARVAN.—For erection of a medical officer's residence and dispensary house at Kilmoney, Dungarvan.—D. McGrath & Son, Mitchell-street (accepted), £7,118.

FERMOY.—For construction of a sewer in the village of Conna, Fermanagh.—T. Casey, Conna, Fermanagh (accepted), £30.

GLENGARIFF.—For building an addition to the Eccles Hotel Glengarriff. Mr. Arthur Hill, B.E., M.R.I.A., 22 George's-street, Cork, architect.—W. H. Jones, Dunmanway (accepted), £5,099 9s. 2d.; W. O'Connell, Cork, £5,380; S. Hill, Cork, £5,641.

KILLARNEY.—For the supply of 32 tons of 8in. and 24 tons of 6in. water-pipes, delivered at Killarney railway station, for the Killarney Urban District Council.—J. Shaw and Co., Maryhill Ironworks, Glasgow, 6in. pipes 66 per ton 6in. £5 11s. (accepted); MacFarlane, Strang, and Co., Glasgow, £6 13s. 6d. and £6 10s. 6d. McLaren and Co., Glasgow, £6 11s. 6d. and £6 10s. 6d.; J. McEwan and Co., Glasgow, £6 12s. and £6 14s. 3d.; Glasgow Iron Company (per E. Murphy, Cork), £6 14s. and £6 8s.; Storey and Sons, Manchester, £6 7s. 6d. and £6.

LISNASKEA.—For new teacher's residence, Lisnaskea.—W. Rowe, £345; J. Bloomfield, £341; R. Armstrong, £315; J. Cowan, Ballinamallard (accepted), £295 10s.

LARNE.—For sewerage work at the Workhouse, Larne. J. Lowden & Co., £87 5s. 6d.; G. Trotter, £72 2s. 6d.; W. McNeill & Sons, £64 8s.; D. Dowds, Main-street, Larne (accepted), £63 8s. 3d.

MACROOM.—For repairs to the schoolboys' lavatory at the Macroom Union.—J. McCarthy, £23 10s.; W. Coughlan, £19 10s.

MARYBOROUGH.—For painting all the exterior wood and iron work of the Maryborough District Asylum.—M. Quigley and Sons, Birr (accepted), £154 18s.; R. Abraham, Maryborough, £120; J. Fox, Maryborough, £102 10s.; J. O'Connell, Nenagh, £300; W. L. Roban, Athlone, £300 10s.; W. Coleman, Maryborough, £500.

NENAGH.—For erection of business premises in Castle-street and St. Peter street, Nenagh, Co. Tipperary. Messrs. W. H. Hill & Son, architects, 28 South Mall, Cork.—J. Bourke, Nenagh (accepted), £2,740.

CONTRACTS.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

ROYAL COLLEGE OF SCIENCE FOR IRELAND.

The Session 1901-1902 commences on TUESDAY, October 1st.

Diplomas of Associateship are given in the Faculties of Manufactures (Chemical), Engineering, Mining, Applied Physics (for Electrical Engineers), &c., and Natural Science. A Course in Technical Agriculture has recently been added.

Two Royal Scholarships are competed for at the end of the first year, giving Free admission to all the Courses for the two following years, and an allowance of £50 per annum.

The Courses of Chemistry, Physics, Botany, Zoology, Geology, and Mineralogy qualify for the Examinations at the Royal University (Ireland) and elsewhere; Certificates are granted to Medical, Pharmaceutical, and other Students for Special Courses.

The Chemical, Physical, Botanical, Geological, and Mineralogical Laboratories open for practical work.

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Physics	W. F. Barrett, F.R.S., M.R.I.A.
Chemistry	W. N. Hartley, F.R.S., F.C.S., F.R.S.E.
Zoology	Vacant.
Botany	T. Johnson, D.Sc., F.L.S., M.R.I.A.
Geology and Mineralogy	Grenville A. J. Cole, M.R.I.A., F.G.S.

Applied Mathematics and Magnetism.....W. McFadden Orr, M.A.

Descriptive Geometry and Engineering.....James Lyon, M.A.

Fees for Associates from £12 to £21 per Session, according to the Faculty and year.

Non-Associate Fees—Lectures, £2 per Course; Laboratory Fees, from £2 upwards.

NOTE.—The Entrance Examination for the Three Years' Associate Course will be held on the First Day of the Session. Subjects—Mathematics and Elementary Practical Geometry.

ALL COURSES ARE OPEN TO LADIES.

Further information on application to

THE SECRETARY, Royal College of Science, St. Stephen's Green, Dublin.

CONTRACTS.

KERRY COUNTY COUNCIL.

TO BRIDGE BUILDERS AND CONTRACTORS.

The County Surveyor of County Kerry is prepared to receive Tenders for the rebuilding of the Cashen Ferry Bridge (east iron screw piles and steel superstructure). Plans and specification can be seen at, or obtained from, his Office, and a Form of Tender obtained on the payment of a fee of One Guinea, which shall be returned on receipt of a *bona fide* tender.

Intending Contractors must be prepared to enter into a bond with Two solvent and sufficient Securities for the full amount of the tender, plus one thousand pounds.

Tenders, on the proper Form, must be lodged at his Office in a sealed envelope, endorsed "Cashen Ferry Bridge," not later than SATURDAY, the 7th day of SEPTEMBER, 1901.

The lowest or any tender will not necessarily be accepted.

SINGLETON GOODWIN,

County Surveyor, Tralee, County Kerry.

14th August, 1901.

ANSWERS TO CORRESPONDENTS.

[We shall at all times be most happy to assist our readers, and, in particular, Students, by answering inquiries in these columns, and affording any information in our power.]

"ALPHA."—WOOD BLOCK FLOORS.—These can be laid in asphalt; but we should strongly recommend, as making a far better and much more economical job, to lay zin. of coke-breeze concrete all over the present bed of concrete; then you can nail ordinary tin. flooring, or blocks, down to the coke-breeze concrete. Before laying this concrete, strips of wood, zin. by zin., should be placed on edge 6 feet or 8 feet apart to form screeds for getting a level surface. The coke-breeze, which can be obtained at any gasworks, should be mixed with Portland cement in the proportion of four parts of coke-breeze to one part of Portland cement, thoroughly turned over first in a dry state, then water gradually added till the mixture is quite sloppy. This is necessary, because the coke-breeze absorbs a great quantity of water. The coke-breeze concrete should be left to dry and harden for at least three weeks before the floor is nailed to it.

F. J. (WATERFORD).—POINTING STONWORK OF CHURCH SPIRE.—The mortar that we should recommend for the pointing of the above should be composed of one of White's London cement to one of washed sand, joints to be well raked out and washed, and then finished off with the jointer. This, we believe, will be found the most durable for a good job.

J. MAX HILL.—Can any reader say who are the promoters of the proposed scheme to build a pier and to utilise Berehaven for Transatlantic traffic?

SEE OUR EXHIBIT, No. 519 Machinery Hall, GLASGOW EXHIBITION.

Also, Electric Pillars and Drinking Fountains throughout the Exhibition Grounds.

MACFARLANE'S CASTINGS

ELECTRIC LIGHT PILLARS

BANDSTANDS
RAILINGS AND GATES
STABLE FITTINGS
RAILWAY BRIDGES AND ROOFS
CONSERVATORIES
AND CONSTRUCTIONAL
WORK OF EVERY DESCRIPTION

WALTER MACFARLANE & Co.
SARACEN FOUNDRY,
GLASGOW.

WALTER MACFARLANE & CO. GLASGOW

GLASGOW INTERNATIONAL EXHIBITION.

SEE OUR
EXHIBITS
AS FOLLOWS—

Architectural and General Iron Work—Stand No 519, Machinery Hall.
Stable and Byre Fittings at Messrs. Speirs' Model Farm, Exhibition Grounds.
Spray Fountain, 37 ft. dia. by 40 ft. high, facing Principal (North) Entrance.

CONTRACTS.

Work.	For Whom.	Particulars from	Last date.
BALLYMONEY — (1) Erection of a drying chamber in the Workhouse. (2) Making and constructing sewers at the Workhouse. (3) Providing and fitting baths in the men's probationary ward of the Workhouse.	For the Guardians	T. B. Hamilton, Clerk, Ballymoney	September 26th, 1901
BELFAST — Building and completing a new dining hall, scullery, and reading-room at the Workhouse.	For the Guardians	Messrs. Young & McKenzie, Engineers, Scottish Provident, Belfast, or from the Clerk	September 24th, 1901
CASTLELAND — The completion of the tower and spire of the R.C. Church, Castleland.	For Archdeacon O'Leary, P.P.	Mr. D. J. Coakley, Architect, Cork	September 28th, 1901
LISTOWEL — <i>Electric Lighting.</i> The supply of Electricity for street lighting	For the Council	The Council	September 30th, 1901
ENNISCORTHY — Lighting the Institution with a system of oil gas	The Committee of Management of the Enniscorthy District Asylum	Resident Medical Superintendent, District Asylum, Enniscorthy	October 2nd, 1901
CARRICKFERGUS — For cementing walls, flooring rooms, painting and general repair at Spill's Institution, Carrickfergus	The Superintendent	The Superintendent	October 1st, 1901
LONDONDERRY — Erecting a masonry wall with concrete coping, to enclose ground for cemetery, and erecting a gate-house for caretaker of cemetery	—	W. D. R. Taggart, C.E., 17A Donegall-st., Belfast	October 5th, 1901
Co. DOWN — Extension of Killea Waterworks	For the Council	Mr. J. J. S. Barnhill, Engineer to the Council, 1A Strand, Londonderry	October 7th, 1901
Improvement of Annalong Harbour	County Council	Mr. Q. McIlwaine, Secretary to the County Council, Court House, Downpatrick	October 19th, 1901
Water Supply Works	Monaghan U.D.C.	J. H. M. Wilson, C.E., Monaghan	October 5th, 1901

TENDERS.

BANBRIDGE.—For erection of new schoolhouse and boundary wall in Banbridge, for the Select Vestry of Seapatrik Parish.—D. Dalzell, Rathfriland, Co. Down (accepted), £489; J. Kidd, 55 Duncrain-street, Belfast, £583; Martin and Sons, Ballydown, Banbridge, £585; J. Graham, jun., Lagan Steam Mills, Dromore, £605; D. Cromie, Scarva-street, Banbridge, £611; S. McWhinney, Upper Clifton-road, Bangor, £900.

PORTRUSH.—For the construction of two pathways near the gasworks in Kerr-street, for the Urban District Council.—Chas. Stewart (accepted), £70. For the construction of a pathway near the Methodist Manse, for the Urban District Council.—Hugh M'Allister (accepted), £70. For the erection of a hoarding, Coleraine-road, for the Urban District Council.—Graham (accepted), £37 18s. 6d.

CITY OF DUBLIN TECHNICAL SCHOOLS.

UNDER THE CORPORATION.

FIFTEENTH SESSION—SEPTEMBER, 1901.

MAY, 1902.

CLASSES WILL RE-OPEN ON MONDAY, 30th SEPTEMBER, IN THE FOLLOWING SUBJECTS:—

Applied Mechanics.	Mechanical Engineering.
Steam.	Plumbing.
Practical Geometry.	Metal Plate Work.
Machine Construction and Drawing.	Boot and Shoe-making.
Practical Mathematics.	Tailors Cutting.
Building Surveying.	Elementary Instruction in Wood-working Tools.
Building Construction and Drawing.	Writing and Commercial Penmanship.
Elementary Physics.	English Grammar and Composition.
Sound, Light, and Heat.	Book-keeping.
Electricity and Electrical Engineering.	Arithmetic.
Inorganic Chemistry (theoretical and practical).	Shorthand.
Organic Chemistry.	French.
Freehand and Geometrical Drawing.	German.
Model Drawing.	Painters' and Decorators' work
Modelling.	Linotype Printing.
Carpentry and Joinery.	Dressmaking.
	Cookery.

Fifteen Scholarships and numerous Prizes are offered for competition.

The Schools open each evening from Thursday, the 10th inst., at 7.30 o'clock, for the enrolment of pupils. For fees and Time Table of Classes, see prospectus, which may be obtained from the Secretary, at the School, Lower Kevin-street, or by post, 2½d.

DRAIN PIPES AND CEMENT.

Wanted a quantity delivered at Ardagh Railway Station, Portland Cement, M.B.W. standard, and 4in. by 6in. glazed fireclay and stoneware piping.

Applications from Competent Men to Joint Pipes.

Particulars from,

F. C. HARTIGAN, B.E.,
Rathkeale.

NOTICE TO BUILDERS AND CONTRACTORS.

Tenders will be received from competent persons for the erection and completion of extensive additions and alterations to the Loretto Convent, Navan, Co. Meath, according to the Plans and Specifications to be seen at the Loretto Convent, Navan, and at my offices.

Tenders to be forwarded to the Very Rev. M. Dooley, D.D., V.F., St. Finian's Seminary, Navan, on or before November 1st, 1901.

The lowest or any tender not necessarily accepted.

J. J. O'CALLAGHAN, Archt., F.R.I.A.I.

Offices, 16 Nassau-street, Dublin.
September, 1901.

A LOST NORFOLK CHURCH.—“Lost Churches” is the subject of an article in the *Quiver* by Miss Gertrude Bacon, who thus tells the story of Eccles Town:—“The last few years have witnessed the downfall of a most interesting relic in the adjoining county of Norfolk. About 16 miles south of Cromer, on the sea coast, is the little village of Eccles; and here, actually upon the beach, amid the sand hills, stood, until some four or five years ago, the tower of the old parish church. It formed a sufficiently striking object, standing up in weird isolation on the lonely shore, the sand silted up round its crumbling wall, and the wind whistling through its hollow dismantled belfry. Three hundred years ago Eccles was a large and flourishing fishing village with an acreage of 2,000. To-day, bare 250 acres and 14 houses remain, for the hungry sea has swallowed all the rest. A terrible inundation in 1605 swept away from the parish several hundred acres at one fell swoop, as also 66 houses and the church, all but the tower. This, too, has now fallen, and strewn the beach with its broken masonry.”

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester grates to the new Cottage Hospital, Abergavenny.

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Stable and Byre Fittings at Messrs. Speirs' Model Farm, Exhibition Grounds.
Spray Fountain, 37 ft. dia. by 40 ft. high, facing Principal (North) Entrance,

TENDERS.

BELFAST.—Fitting and Supplying Bath.—J. Lowden & Co., £18 15s. od.; R. Jamieson & Co., £10 7s. od.; D. Christie (accepted), £9 17s. od. For supply and erection of one multibular boiler at Dunce Street pumping station, Belfast.—V. Coates & Co., Ltd., Belfast (accepted), £450. For plumbing work in new lodging-house, Lower Regent Street, Belfast.—R. Patterson & Co., High Street (accepted), £413.

BALLYMONEY.—For executing the following works.—Sewerage works.—R. Young, £312 11s. 6d.; J. Lowden & Co., £270; D. Christie, £265 1s. 10d.; R. Jamieson & Son, Ballymoney (accepted), £250 4s. 8d. Erection of a drying chamber.—Ravenhill Ironworks, Ltd., £95 os. od.; J. Henry, Ballymoney (accepted), £82 10s. od.

LISTOWEL.—For constructing waterworks at Tarbert and Tarbert Island, Listowel.—P. Dillon & Son, 5 Castle Street, Limerick (accepted), £745.

SLIGO.—For repairing three houses, the property of Mrs. Christy, in O'Connell street, Sligo.—J. Mullen, John street, £520 10s. 6d.; Reynolds Bros., Ratcliff street, £515 9s. 6d.; D. McLynn, Stephen's street (accepted), £595.

CORK INTERNATIONAL EXHIBITION, 1902.

TO CONTRACTORS.

The Cork International Exhibition Company, 1902, is prepared to receive Tenders for the erection of a restaurant.

General conditions and specifications may be seen, and Bill of Quantities obtained, at the office of Mr. Henry A. Cutler, A.M.I.C.E., Municipal Buildings, Cork, on payment of one guinea, which will be returned on receipt of a *bona-fide* tender.

Sealed Tenders, endorsed "Restaurant," must be delivered at my office not later than 12 o'clock, noon, on Thursday, the 17th October.

The lowest or any tender not necessarily accepted.

R. A. ATKINS, Hon. Sec.,

Cork Exhibition Co.

Municipal Buildings, Cork, October 4th, 1901.

NEWRY UNION.

TO BUILDERS AND CONTRACTORS.

On the 19th OCTOBER next the Guardians of this Union will receive and consider Tenders for the

RE-BUILDING OF THE WORKHOUSE.

In accordance with Plans, Specifications, etc., prepared by JOHN BROWN, Esq., Architect, Newry, which can be seen at this Office during business hours.

Bills of Quantities can be obtained at this Office on payment of a sum of £2 2s., which will be returned to all persons sending in *bona-fide* Tenders.

Sealed Tenders, giving the names of Two Solvent Sureties willing to join in a Bond for £5,000 for the due performance of the Contract, will be received by me up to TEN o'clock a.m., on Saturday, the 10th OCTOBER.

The Lowest, or any Tender, not necessarily accepted.

(By Order).

W. R. BELL,

Clerk of Union.

Clerk's Office, Workhouse, Newry,
28th September, 1901.

CORPORATION OF WATERFORD.
STREET COMMITTEE.

WANTED—50 TONS PORTLAND CEMENT.

For Specification apply to M. J. Fleming, Borough Surveyor, 12 Hall-street, Waterford.

Tenders to be lodged with me not later than 10 a.m. on Monday, 14th October, 1901.

J. J. FEELY,

Town Clerk.

Town Hall, Waterford, 30th Sept., 1901.

COUNTY BOROUGH OF BELFAST.

TO BRICKMAKERS.

The Cemetery and Parks Committee of the Corporation invite Tenders for the supply of 50,000 Best Machine-Made, Solid-Compressed Brick, delivered in the Belfast Cemetery at — per 1,000.

Tenders, with Samples, to be lodged in my office on or before the 15th inst., at Four o'clock.

The lowest or any Tender not necessarily accepted.

SAMUEL BLACK, Town Clerk.

NOTICE TO BUILDERS AND CONTRACTORS.

Tenders will be received from competent persons for the erection and completion of extensive additions and alterations to the Loretto Convent, Navan, Co. Meath, according to the Plans and Specifications to be seen at the Loretto Convent, Navan, and at my offices.

Tenders to be forwarded to the Very Rev. M. Dooley, D.D., V.F., St. Finian's Seminary, Navan, on or before November 1st, 1901.

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J. J. O'CALLAGHAN, Archt., F.R.I.A.I.

Offices, 16 Nassau-street, Dublin.
September, 1901.

CITY OF DUBLIN TECHNICAL SCHOOLS.

UNDER THE CORPORATION.

FIFTEENTH SESSION—SEPTEMBER, 1901.

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Building Surveying.	Elementary Instruction in Wood-working Tools.
Building Construction and Drawing.	Writing and Commercial Penmanship.
Elementary Physics.	English Grammar and Composition.
Sound, Light, and Heat.	Book-keeping.
Electricity and Electrical Engineering.	Arithmetic.
Inorganic Chemistry (theoretical and practical).	Shorthand.
Organic Chemistry.	French.
Freehand and Geometrical Drawing.	German.
Model Drawing.	Painters' and Decorators' work
Modelling.	Linotype Printing.
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As a result of the recent decision of the House of Lords, holding the funds of labour unions liable for damage caused by the official action of the unions, the Taffvale Railroad Company has begun suit against the Amalgamated Society of Railway Servants for one hundred thousand dollars damages, incurred by the unlawful action of the Society during the strike of last year. The Blackburn branch of the Weavers', Winders', and Warpers' Association has also been served with papers in connection with a strike in a factory. The Trades Union Congress has appointed a committee to endeavour to find some legal means of protecting the funds of unions from attack.

FIREWOOD

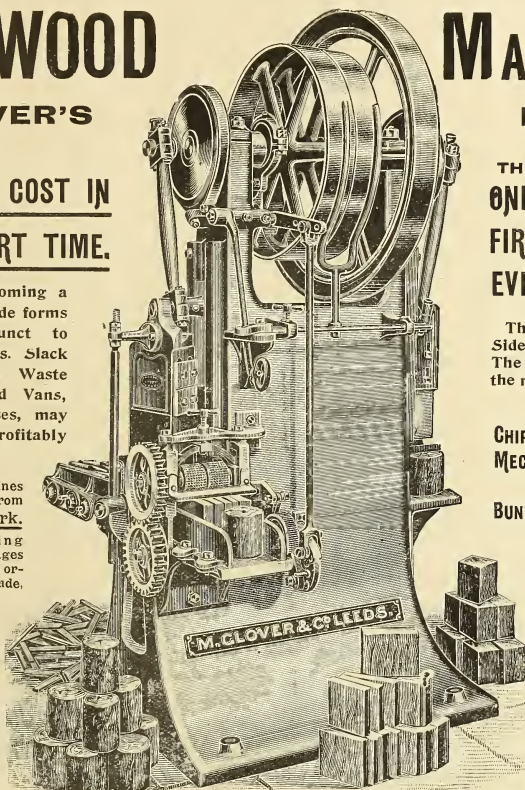
GLOVER'S

SAVE THEIR COST IN
A VERY SHORT TIME.

"Firewood" becoming a most important trade forms an advisable adjunct to many existing trades. Slack Times, Employees, Waste Wood, Horses and Vans, Power and Premises, may all thus be more profitably utilised.

These Firewood Machines being constructed to do from 12 to 60 men's work, the enormous saving effected, therefore, in wages alone, apart from the ordinary profits of the trade, means a

VERY
LARGE
ANNUAL
INCOME.



MACHINERY

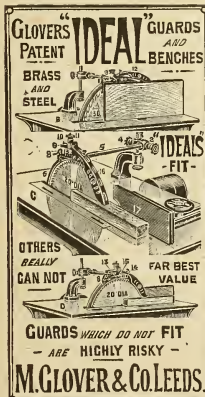
PATENTS.

THE
ONLY SUCCESSFUL
FIREWOOD MACHINES
EVER INVENTED.

This extra "Slabbing Knife" Side is most valuable. Ask Why? The appearance and capacity of the machine is practically doubled.

WE ALSO MAKE A
CHIP "PICKING-UP" APPARATUS,
MECHANICAL CHIP ARRANGERS,
FOOT AND POWER
BUNDLING MACHINES AND
EVERY REQUISITE
FOR THE
MOST ECONOMICAL
PRODUCTION OF
FIREWOOD.

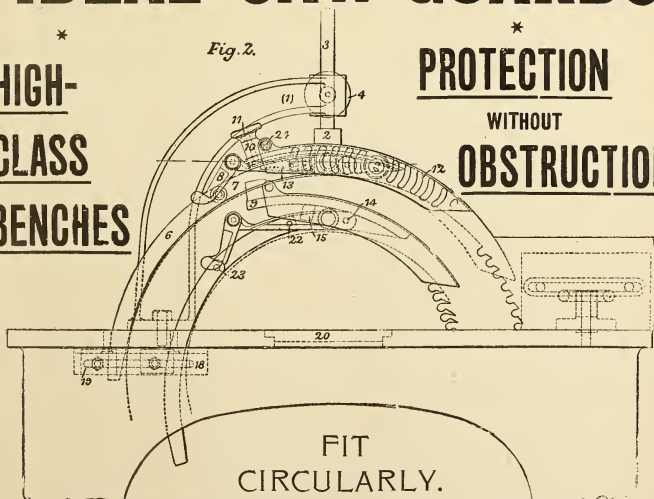
WRITE US
FOR
FULLER
PARTICULARS.



"IDEAL" SAW-GUARDS

HIGH-
CLASS
BENCHES

PROTECTION
WITHOUT
OBSTRUCTION



Absolutely the only form of Guard able to properly FIT and PROTECT different diameters of Saws.

ILL-FITTING GUARDS
HIGHLY RISKY.

THE "IDEAL" has already been selected, tested, and adopted by the leading firms connected with TIMBER, COAL, ENGINEERING, and SHIPBUILDING &c. TRADES, using RAILWAY COMPANIES, CORPORATIONS, &c., &c. with GREATEST POSSIBLE SATISFACTION

M. GLOVER

PATENTEES AND
SOLE MAKERS,
SAWMILL ENGINEERS,

LEEDS.

TENDERS.

CARRICKMINES (Co. Dublin).—For the erection of a dwelling-house and stable in steel and concrete. Messrs. Clare and Ross, A.R.I.B.A., 1 West-street, Finsbury-circus, E.C., and Chelmsford, architects:—R. E. Mellon, Dublin. £2,144; A. Frazer, Bray* £1,900.
* Accepted after amendment.

CLOGHER.—For supplying and erecting at Clogher Workhouse a new cart weighbridge—dimensions 3ft. 6in. by 6ft. 6in.; capacity 2½ tons—for the Guardians:—H. Pooley and Son, Limited, 27 Victoria-street, Belfast, £20; Kiddie and Co., Donegall-place, Belfast, £22 10s.; Hodgson and Stead, Salford, Manchester, £25; Johnston Bros., Clogher, £19 15s.; W. and T. Avery, 28 Byrom-street, Liverpool (too late); G. Crawford and Co., Omagh (too late).

DARKLEY.—For boring and sinking a well at Darkley (Co. Armagh). J. Hill, Airdrie (accepted).

DERVOCK.—For constructing sewers and settling tanks in the village of Dervock, Ballymoney. T. O'Bryan, Dervock (accepted), £147 10s.

KILLYBEGS.—For erection of a house, for Mrs. M. T. MacGinley. Mr. E. J. Toye, Strand, Londonderry, architect. D. McCaffery, Strabane, Co. Tyrone, £1,907 (accepted).

MACROOM.—For sinking two wells and erecting pumps thereon—one at Farren village and the other in the village of Ballingear, for the Macroom Rural District Council. Accepted tenders—J. Foley, Aberla, Cookstown, Farren pump, 19s. 6d. per foot through rock, 16s. 9d. through gravel, 15s. 6d. through clay, and £17 17s. for pump, &c.; C. Moynihan, Gorteenroe, Macroom, Ballingear pump, 16s. per foot through surface, 27s. 6d. through rock, 12s. 6d. for lining well, and £7 10s. for pump.

CORK INTERNATIONAL EXHIBITION, 1902.

TO BUILDERS AND CONTRACTORS.

The Cork International Exhibition (1902) Company are prepared to receive Tenders for the erection of a CONCERT HALL.

General Conditions and Specifications may be seen, and Bill of Quantities obtained, at the office of Mr. Henry A. Cutler, A.M.I.C.E., Cork City Engineer, Municipal Buildings, Cork, on payment of One Guinea, which will be returned on receipt of *bona-fide* tender.

Sealed Tenders, endorsed "Concert Hall," must be delivered at my office not later than 11 a.m. on Thursday, 31st October.

The lowest or any tender not necessarily accepted.

R. A. ATKINS, Hon. Sec.

Municipal Buildings, Cork.

THOMASTOWN UNION.

TO BUILDERS AND PLUMBERS.

The Board of Guardians of the above Union will, at their meeting on Thursday, the 24th October, 1901, receive and consider Tenders for the general repairs and alterations to the Fever Hospital of the Workhouse, which includes Masonry, Carpentry, and Plumbing work.

The Guardians are willing to accept Tenders for any branch of the work, or to take one Tender for all the work.

Specifications, etc., for the above can be seen at the Workhouse.

Sealed Tenders, addressed to the Presiding Chairman, will be received by me up to 11.30 o'clock a.m. on the above-named day.

Solvent security required for the performance of the contract.

The Guardians do not bind themselves to accept the lowest or any Tender.

By Order,

L. BARRY,

Clerk of the Union.

12th October, 1901.

TO BUILDERS.

The Committee of the General Assembly of the Presbyterian Church in Ireland in charge of the ERECTION of ASSEMBLY BUILDINGS at FISHERWICK PLACE, Belfast, invite TENDERS from competent persons for the carrying out of these Works.

Plans and Specifications may be seen at our Office, and Schedule of Quantities can be obtained from Messrs. W. H. Stephens and Son, Donegall Square Buildings, Belfast, on

deposit of Five Guineas, which will be returned when *bona-fide* Tender has been sent in.

Sealed and endorsed Tenders, addressed to Rev. W. Todd Martin, D.D., D.Lit., to be lodged with us on or before the 2nd December. The Committee do not bind themselves to accept the lowest or any of the Tenders.

YOUNG and MACKENZIE, Architects,
Scottish Provident Buildings, Belfast.

21st October, 1901.

LIMERICK DISTRICT LUNATIC ASYLUM.

TO BUILDERS.

The Committee of Management of the above Asylum, at their meeting to be held on Wednesday, 13th November, 1901, will receive Tenders from Building Contractors for Alterations and Additions to the Administration Block, comprising New Stores, Laundry, Kitchen, and Offices, in accordance with the drawings and specifications prepared by Messrs. Carroll, Batchelor, and Browne, joint architects. The drawings and specifications may be seen at the office of Messrs. Carroll and Batchelor, 86 Merriion-square, South, Dublin, or at Mr. O'Malley's, Glentworth-street, Limerick, from whom copy of Bill of Quantities may be obtained on payment of a fee of three guineas, which will be returned on receipt of a *bona-fide* tender. Tenders should be properly endorsed, in sealed envelopes, addressed to Medical Superintendent, and lodged, together with the bill of quantities, with him before 11 o'clock, on Wednesday, 13th November, 1901. Terms and conditions of contract may be seen at the Office of William E. Counihan, Esq., Solicitor, Limerick. The Committee do not bind themselves to accept the lowest or any tender.

DISTRICT ASYLUM, MULLINGAR.

The Joint Committee of Management will, at their Board meeting to be held on the 14th November, 1901, consider tenders for supplying and fitting up a number of steam traps and connecting pipes, also pipes for conveying condensed water to a new tank, at present being erected, and pipes for conveying said tank to steam pumps, etc., in accordance with plans and specifications, which can be seen at the office of their Electrical Engineer, Joshua W. Edmundson, 35 Capel-street, Dublin.

Intending contractors can receive a copy of the specification and form of tender on payment of 20s., at same address, which will be returned on their sending in the specification with a *bona-fide* tender, with the schedule of prices duly filled in. Tenders, sealed and endorsed "Tenders for steam traps, pipes, etc.," must be delivered addressed to the Resident Medical Superintendent, District Asylum, Mullingar, not later than 10 a.m. on Monday, the 11th November, 1901.

The Joint Committee of Management do not bind themselves to accept the lowest or any tender.

By Order.

ARCHITECTS' DESIGNS EXECUTED.



Kingcourt Brick and Terra Cotta Works.



Copings, Ventilators, Ridge Tiles,
Facing and Moulding Bricks

- - -

Window Cills

Mullions and Jambs; Flooring Tiles.

APPLY KINGCOURT BRICK AND TERRA COTTA WORKS.

Works:—KINGCOURT.

Office: 45 FLEET STREET, DUBLIN

SEE OUR EXHIBIT, No. 519 Machinery Hall, GLASGOW EXHIBITION.

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Spray Fountain, 37 ft. dia, by 40 ft. high, facing Principal (North) Entrance.

TRADE JOTTINGS.

The Isolation Hospital, Skipton, is being warmed and ventilated by means of Shorlands' Patent Manchester Stoves, some double-fronted, and some single-fronted, with descending smoke flues, the same being supplied by Messrs. E. H. Holland and Brother, of Manchester.

Irish Ecclesiastical Art in Scotland.—NEW CHAPEL AT BLAIR'S COLLEGE.—Blair's College, which is prettily situated on the Kincardineshire side of the Dee, about six miles from the city of Aberdeen, was recently the scene of an interesting ecclesiastical function. This was the opening of the splendid new chapel, which is another instalment of the buildings that are to constitute New Blair. It is the gift of the Right Rev. Monsignor James Lennon, Liverpool. Both externally and internally the chapel is a beautiful structure in the Gothic style of the middle period, from designs by Mr. Robert Curran, architect, Warrington. Cruciform in plan, it is 120 feet long, with a nave 35 feet wide, and side chapels 22 feet long and 17 feet wide. The stone used is Rubislaw and Kemnay granites. The interior is finely furnished. The altar is very beautiful, with its exquisitely harmonised marbles—Sicilian, Carrara, Irish, and Mexican Onyx, and the reredos, which has not yet been erected, will add much to the effect of this fine specimen of ecclesiastical art, which is by Messrs. Pearse and Sons, Dublin. The centre panel contains a representation of de Vinci's "The Last Supper," carved in high relief in Carrara marble; the side panels being filled by figures in the attitude of adoration. Messrs. Pearse's plans include a large reredos, which will be built against the octagonal wall of the sanctuary. When the complete plans are carried out, the sanctuary will be one of the finest in Scotland. The altar and reredos are from the designs of Mr. W. J. Pearse.

Messrs. Young and Marten, Ltd., Manufacturers and Builders' Providers, of Caledonian Works, Stratford, London, E., send us a complete set of their general catalogues. These catalogues are comprised in two well-bound, neat, substantial volumes. They cover an exceedingly wide range of goods, and include all kinds of builders' ironmongery, from locks to mantels, closets, pipes, tiling, plumbers' brass work, lightning conductors, etc. The descriptions are very full and complete, and the book is just the thing for handy reference in a builder's office. The variety and extent of the selection offered is really remarkable, and, as the firm themselves say, "their stock is replete with every article required in building construction in everyday demand." Messrs. Young and Marten's business was established in 1871, and since then has increased by the proverbial leaps and bounds, until to-day their premises cover an area 200 times greater than that with which the business was begun.

A GOOD SYSTEM OF LIGHTING.

Husson's Safety Acetylene Syndicate, Limited, Victoria Mansions, 28 Victoria street, Westminster, S.W., send us an interesting catalogue of their system of Acetylene Gas Lighting.

Professor Vivian B. Lewes, F.I.C., F.C.S. (who is considered the highest authority on Acetylene), in a report published in *The Journal of Acetylene Gas Lighting* on the progress of Acetylene up to the end of 1899, states:—"In the near future it will be recognised that all forms of automatic generators have their drawbacks, and the generator of the future will be of the greatest simplicity, and will be merely used to charge a gasholder capable of containing the gas needed for the evening's consumption."

About the year 1832, E. Davy prepared a Hydro-Carbon Gas by bringing Carbide of Calcium into contact with water, which he named Klumene. Berthelot, the French chemist, discovered a similar process, and called the gas produced Acetylene.

Carbide of Calcium is now produced by subjecting a powdered mixture of lime and coke to the heat of an electric furnace. It is perfectly safe and free from any danger in the handling, and needs only to be kept dry. It will not explode even if thrown on a fire. By bringing the Carbide into contact with water Acetylene is produced.

The light from Acetylene properly generated and purified, is powerful, clear, and penetrating, and used with suitable burners develops an illuminating power 15 times greater than ordinary coal gas—that of Acetylene being 240 candle power as against 16 candle power of coal gas.

The specific gravity of Acetylene being 0.9 and that of coal gas 0.4, the volume which would pass through fissures of the same size would be 3 of coal gas and 2 of Acetylene.

No more care need be observed than that required in the use of coal gas. All realise that, owing to accidents through inferior and wrongly designed apparatus, a strong prejudice against Acetylene lighting has to be overcome, but by care and attention to detail in every installation, we are sure that Acetylene lighting is bound to find favour in the near future, and so confer an especial boon on householders and others in country places, where the advantages of a public supply of electricity or purified gas are not obtainable, and rid them of the dangers and inconveniences attending oil lamps.

The problem of lighting a large church, an assembly hall or the like, in an Irish country town is one which often presents incredible difficulties. As a rule the local gas supply is very inferior and costly. An electric installation means a large capital outlay for plant, in the shape of storage batteries, gas engines, etc. Oil lamps are clumsy, dirty, and need constant attention. Such cases as these afford special opportunities for the use of Acetylene.

CONTRACTS.

LIMERICK DISTRICT LUNATIC ASYLUM.

TO BUILDERS.

The Committee of Management of the above Asylum, at their meeting to be held on Wednesday, 13th November, 1901, will receive Tenders from Building Contractors for Alterations and Additions to the Administration Block, comprising New Stores, Laundry, Kitchen, and Offices, in accordance with the drawings and specifications prepared by Messrs. Carroll and Batchelor, 86 Merriion-square, South. The drawings and specifications may be seen at the office of Messrs. Carroll, Batchelor, and Browne, joint architects, Dublin, or at Mr. O'Malley's, Glentworth-street, Limerick, from whom copy of Bill of Quantities may be obtained on payment of a fee of three guineas, which will be returned on receipt of a *bona-fide* tender. Tenders should be properly endorsed, in sealed envelopes, addressed to Medical Superintendent, and lodged, together with the bill of quantities, with him before 11 o'clock, on Wednesday, 13th November, 1901. Terms and conditions of contract may be seen at the Office of William E. Counihan, Esq., Solicitor, Limerick. The Committee do not bind themselves to accept the lowest or any tender.

NOTICE TO BUILDERS.

Tenders are required for the Erection of Tower and Spire at the R.C. Church, Castleisland, Co. Kerry.

Bills of Quantities have been prepared, and can be obtained at my Offices, or from Messrs. J. M.D. Bermingham and Son, Surveyors, Leinster Chambers, 43 Dame-street, Dublin, or from the Ven. Archdeacon O'Leary, P.P., Castleisland, at all of which places the plans can be seen.

Tenders, addressed to the Ven. Archdeacon O'Leary, P.P., Castleisland, to be forwarded not later than THURSDAY, 14th November, 1901.

The lowest or any tender not necessarily accepted.

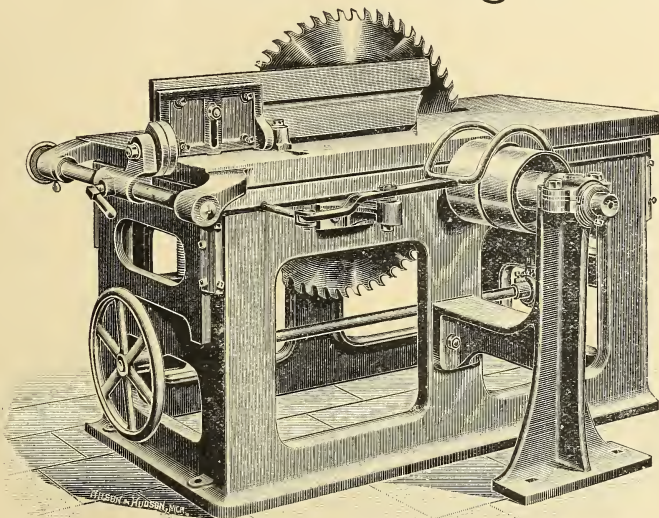
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Double	$\frac{13}{16}$ in.	3d.	
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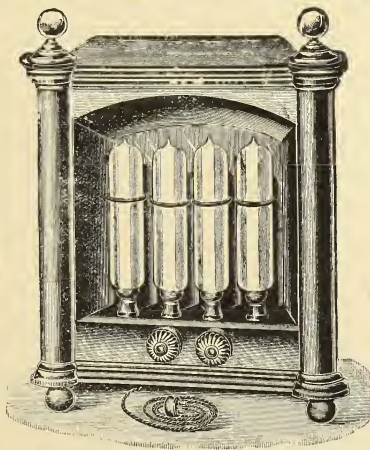
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LETTERKENNY.—For the general renovation of dwelling-house, including additions and sanitary arrangements, for Mr. Field, Letterkenny. Mr. John M'Intyre, Letterkenny, Architect.—R. Kennedy, Letterkenny (accepted), £295 10s.; W. Wilson, Letterkenny, £312.

RATHDOWN.—For about 950 yards iron fencing and rabbit netting gates and wickets for the Rathdown R.D.C., No. 1. R. M. Butler, M.R.I.A., Architect, Dawson Chambers, Dublin.—No. 1.—Thomas McKenzie & Co. 2 bars, 3 gates, 3 ft. apart, 3 ft. 8 in.; 2 whole five, 4s. 7d. Wickets, each, £2 18s. 6d.; Corner Pillars, 14s.; Gates, £4 13s. 6d. No. 2.—A. J. Main & Co., Standards, 4 ft. apart, 2s. 10d.; Corner Pillars, 14s.; Wickets, £2 12s. 6d.; Gates, £3 10s. No. 3. Kennan & Sons, 1 top 4 in., 4 lower 3 in., standards, 3 ft. apart, 3s. 6d.; Corner Pillars, 10s.; Wickets, £2 10s. 6d.; Gate, £2 19s. 6d. No. 4.—Hill & Smyth, 1 top 4 in., 2s. 6d. Standards 4 ft. apart. Netting, 3s. 2s. 6d.; Pillars, 10s. 9d.; Wicket, £2 3s. 6d.; Gates, £3 10s. 6d. No. 5.—J. J. Doyle, Shankill (accepted), Standards 5 ft. apart. Top bar 4 in., lower 4 in., 3 ft. 8 in., 3s. 3d.; Wickets (including pillars), 2s. 3d.; Gate (including pillars), £3 10s.; Pair of Gates, £4; Pillars to ditto, 6s.

BREVITIES.

In the course of another able address, recently delivered, Father O'Donovan, of Loughrea, said that "The public bodies of Ireland who gave large contracts had their responsibilities. These institutions were kept up by the money of the ratepayers, and traders in Ireland, provided they gave good value, had a first claim for orders." He next dealt with the classes—architects, clergy, and others—who placed large orders in England, Scotland, and elsewhere, that might easily be fulfilled in Ireland. Their churches were filled with foreign rubbish. He had never yet seen good foreign art in Irish churches. The least the priests of Ireland should do for the industrial revival movement was to stay at once all orders for foreign work. At that moment it was quite possible to get all kinds of church decoration, stained-glass, statuary, and painting done in Ireland, and not only Irish in workmanship, but of the finest artistic quality. The aim of church decoration was to beautify God's House, not to make it ugly and hideous, as had been but too often the result in Ireland."

Soldering Notes.—We may here state that the special point to observe in soldering is cleanliness—not only general cleanliness, but the parts must be chemically clean. This is essential in soldering either zinc or lead, or in brazing metals. The use of spirits of salts on the copper bit is to ensure this absolute freedom from dirt, and assist in the flux, or fusion. The method of work with the copper bit is to get a piece of sal ammoniac (which can be bought by the pennyworth at any chemist's), clean the face of the copper bit with a file, then, after making the bit hot, rub on the sal ammoniac with a piece of solder, and there is then no difficulty in turning the bit. It may be that the handy man will desire to solder some articles in tin. The process is then as follows:—Get one pennyworth of spirits of salts, as above, put some bits of clean zinc into it, as much as the salts will dissolve; after it has done boiling, add about one-third of water. Clean the part, if old, from all dirt and grease, touch the place with a small brush dipped in salts, and use the copper bit. Be careful that while the bit is made quite hot it does not approach a red heat, as that would then burn the face off.

Claremont Park, Esher, where the Duchess of Albany and Princess Alice of Albany have just arrived for a short period of residence, derives its name from Thomas Pelham, Earl of Clare (afterwards first Duke of Newcastle), who bought the house from Vanbrugh, the architect and original owner. It was at Claremont that a hyper-complimentary poet of the time declared that "Nature borrowed dress from Vanbrugh's art," and that at the architect's touch, like Amphion's, "stones mount in columns, palaces aspire." Vanbrugh's house was pulled down by the next owner, the famous Lord Clive, who built the present mansion at a cost of £100,000. "Capability" Brown designed both house and grounds. Claremont changed hands several times after Clive's tragic death, and was finally sold to the King (George IV.), who settled it on Princess Charlotte and her husband, Prince Leopold. As everyone knows, the poor little Princess died the year after her marriage, her husband surviving her for nearly half a century, during the whole of which time he retained possession of Claremont and of his nice little jointure of £50,000 a year. There are still many memorials of the Royal pair at Claremont, including full-length portraits of them both, and pictures of the Princess's dogs and horses. The house is never open to visitors, but a public road runs through the fine park, in which there is a lake of considerable extent.

CONTRACTS.

ATHLONE UNION.

NOTICE TO BUILDING CONTRACTORS AND PUMP SINKERS.

The Board of Guardians of the above Union invite tenders for the erection at Brideswell of a Doctor's Residence, Stables, and Dispensary, and other work, according to plans and specification, which can be seen at the office of P. J. Pendergast, Esq., A.M.I.C.E., Athlone. The engineer will point out the site to intending Contractors at 1 o'clock on the 30th December.

Tenders will only be accepted conditionally on the loan for the work being sanctioned by the Local Government Board.

The Contractor must state in his tender the names of two solvent sureties willing to join in a bond for double the amount of the accepted tender, for the due performance of the contract. The bond will be prepared by the Board's Solicitor, and the entire cost of same must be paid by the Contractor.

Tenders will be received by me up to 11 o'clock on SATURDAY, the 4th JANUARY, 1902, and will be considered at the Board meeting on the same date. Each tender must be enclosed in a sealed envelope, and endorsed on the outside, "Tender for Brideswell Dispensary and Residence."

The Guardians do not bind themselves to accept the lowest, or any, tender.

(By Order),

JOSEPH S. VAUGHAN, LL.D.,
Clerk of Union.

Boardroom, Athlone,
9th December, 1901.

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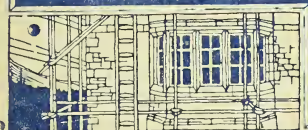
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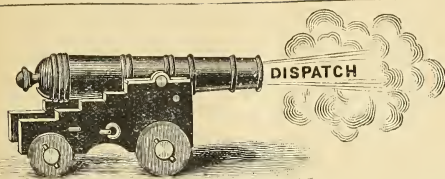
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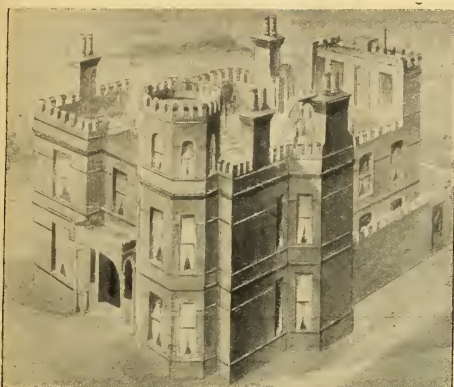
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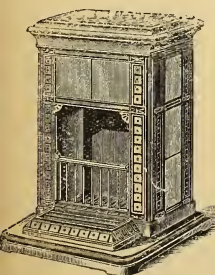
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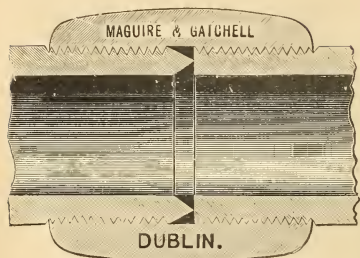
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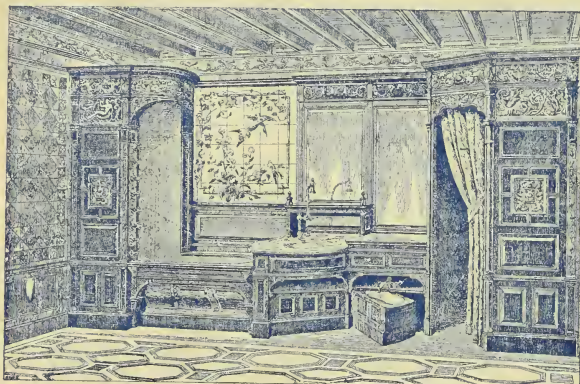
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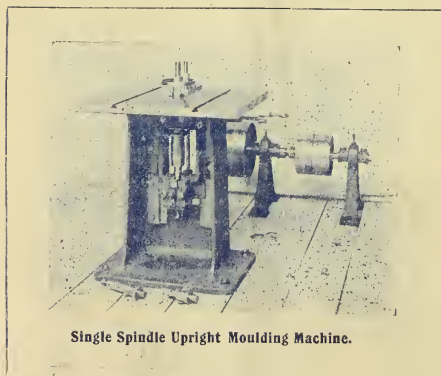
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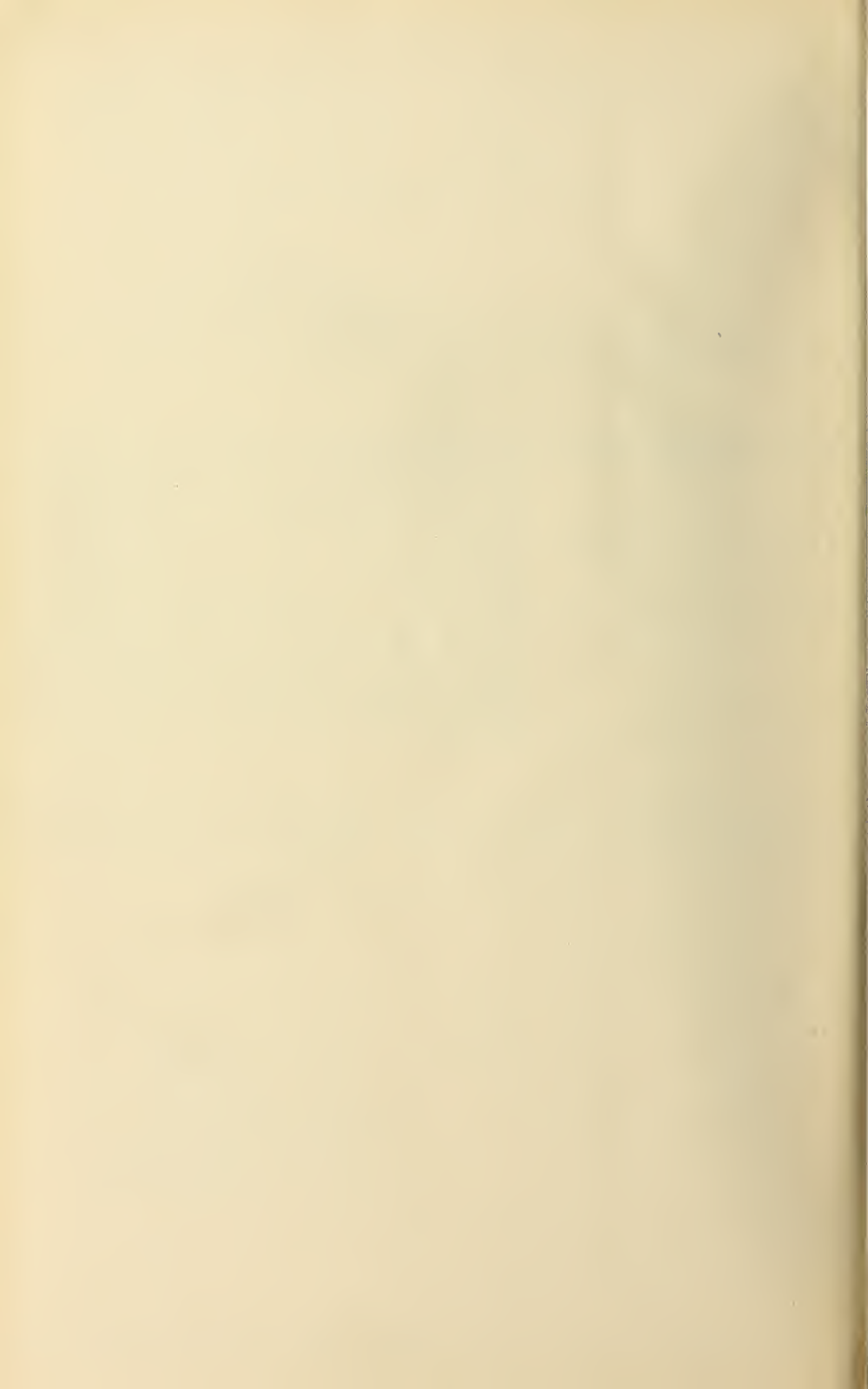
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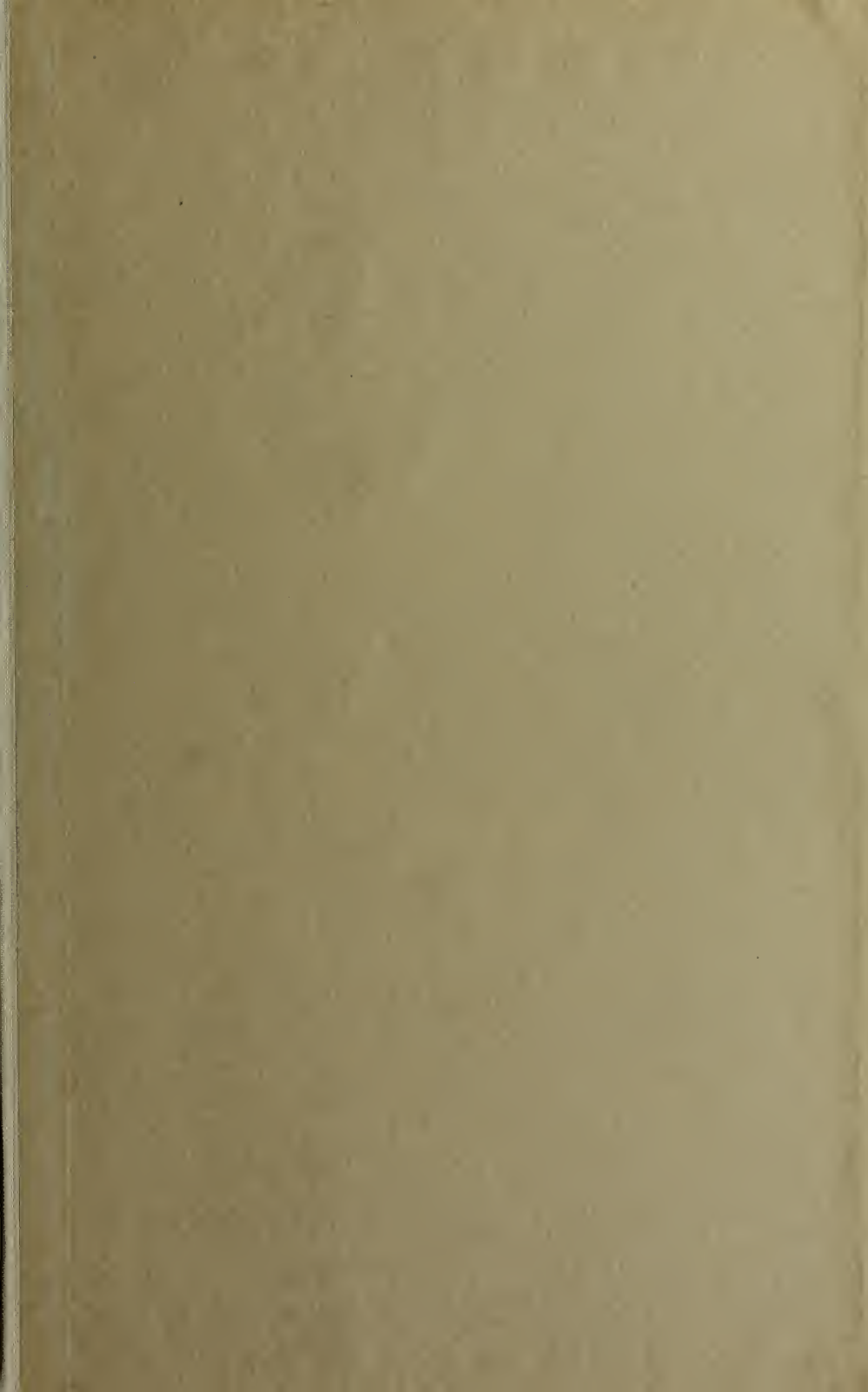


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